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BIOGRAPHY

OF

SELF-TAUGHT MEN:

WITH AN

INTRODUCTORY ESSAY.

Per augusta ad augusta.

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INTRODUCTORY ESSAY.

THE future history of the United States is a subject of deep interest. We are come to a very important period in our course. The strength of our political system is beginning to be tried. The tendencies of our institutions are becoming apparent. The elements which form a general national character, are combining and coalescing. It is emphatically a day of trial. Every thing is subjected to a rigid scrutiny. Merely prescriptive rights are abandoned. Reliance upon authority is given up. Such being the condition of the country, it is not an inappropriate question, What is to be done? There are local divisions, civil strifes, rival religious denominations, great questions pending in political economy, interesting relations with other portions of the world, and boundless resources for good or evil. What then are the duties which devolve on the American citizen?

It is very obvious, in the first place, that in the passion for novelty and change, we are to see that we do not give up any thing which is truly valuable. We ought to remain firm on those great principles of politics and education, morals and religion, which have been tried, and have not been found wanting. There is little danger in this country of a too pertinacious attachment to old systems. The hazard is all on the other side. The love of innovation is vastly an overmatch for a blind regard to authority and antiquity. In detaching ourselves from what is absurd and erroneous in former opinions, we shall, without great circumspection, abandon the true with the false, and shall soon find ourselves on an unknown sea, without any experience from the past, or guide for the future. As an instance in point, I might allude to the excessive simplification in books of education, relieving the student from the necessity of patient attention, and of thorough and discriminating habits of thought.

Another duty of great importance is, to induce a more fervent and general coöperation of the advocates of sound principles, in the diffusion of their opinions. There is little concentrated sympathy and fellow-feeling among the friends of man. They have not learned the power of associated effort. They do not act in masses. This trait in

our character is principally owing to two reasons. We have no capital city. We have no acknowledged metropolis of letters or influence. There is no London, to which all the provincial towns willingly bow in homage. The tendency of our republican institutions is such, also, as to prevent an embodied and powerful action of the friends of virtue. Our freedom of thought and independence of character we sometimes carry to an extreme. We are better as private citizens than as members of a commonwealth. It is not true that the state of public morals and virtue is as elevated as that of the individuals who compose a community. We do that in a collective capacity, which we should not dare to do as friends or neighbors. Conscience, and the faith of solemn compact, are often voted away, when personal honor, or a mere verbal engagement, are sacredly remembered and redeemed. When a great principle is at stake, we must learn to dismiss all minor differences, to forget all local attachments, to abjure utterly every selfish consideration. What is a party, what is a religious denomination, when a fundamental law of right or justice is at issue?

Intimately connected with the preceding remark, is the undoubted truth, that questions of political economy are to be viewed far more than they

have been in this country, in connection with the operations of the providence of God. What volumes of ingenious speculation have been wasted in this captivating science, simply because the authors did not, or would not, look at the arrangements of the Power that ruleth over all. It is not pretended but that there are great and intrinsic difficulties in shaping a system of commercial intercourse, among the different parts of this country, and between the United States and foreign nations. Still it may be safely asserted, that one half of the vexation and trouble which have been experienced, would have been avoided, if our legislators were all Christian economists. The Author of nature, and of nations, did not leave the great subjects of internal or international commerce in such profound doubt and mystery as is now thrown around them. He has made all the parts of a country mutually dependent upon each other, on purpose to counteract the selfishness of men. To promote the prosperity of one division of the United States, at the expense of the happiness of any other portion, is adopting certain means to ruin the whole. The unnatural growth of one empire is as certainly destructive to itself as it is to that land from which it has subtracted its wealth. Men cannot be politicians, in the best sense of the word, with-

out adopting the principles of the Bible. The book of Proverbs, and the sermon on the Mount, contain the elements of the best political economy which was ever devised. They inculcate what is of immeasurable importance in the intercourse of nations — enlargement of mind, and comprehensiveness of view, and clearness and power of conscience. These would settle questions of foreign intercouse and domestic improvement, with far more certainty and safety than the volumes of Adam Smith, or the statistics of Seybert or Pitkin. Here, then, is a great duty to be performed. Those same elevated and Christian principles are to be carried into all the duties of the statesman, which have been so happily introduced into some of the departments of criminal jurisprudence and penitentiary discipline.

It is very evident, moreover, that great efforts are required to maintain the due ascendency of mind over matter. The accumulation of wealth is the object which absorbs the attention of all classes of our community. Almost the entire population of the country are earnestly engaged in the development and employment of the physical resources of the nation. There is a boundless selfishness — a restless and unappeasable desire to amass riches. This is the general theme of conversation in the public stage-coach;

it is the reiterated topic of recommendation in official documents; it is the foundation of irritating comparisons between different portions of the country; it causes the desecration of the ever to be hallowed Sabbath; it stimulates the waking hours and animates the dreams of the private citizen. Mammon is the god of this country. The attainment of wealth is pursued, not as a means, but as an end. Our government does not employ the abundant resources of the nation, in extending the boundaries of science and of civilization, *but rather in the purchase of more land.* Individuals, as a general thing, do not amass wealth for the sake of becoming Mæcenases, or Thorntons, or Boudinots, but for some personal and selfish consideration. Now this insatiate worldliness ought to be counteracted. A powerful weight should be thrown into the opposite scale. Our country is ruined if it becomes too prosperous. Wealth, with all its concomitants and adjuncts, will not save us. Rocky coasts and rough fields, with virtuous hearts, are a richer inheritance than the golden mines of both hemispheres. It is the extension of the empire of mind which we need. It is the cultivation of the domestic graces and accomplishments. It is intellectual and moral glory, after which we must aspire. We must attain the enviable honor of

being an intellectual and religious nation. In renouncing the crowns and coronets, the pomps and vanities, of the old world, let us not devote ourselves to that which is infinitely more sordid.

This leads me to remark, that we are called to the work of educating an innumerable multitude of minds. Popular instruction, in its most comprehensive import, is to be the theme of absorbing interest. Connected with this subject, are questions of very wide application, which have been hardly considered yet. We are to provide means for extending the benefits of education to the extremities of society, to a scattered and ever emigrating population. We are to devise the best methods for combining legislative supervision and patronage, with private munificence. The philosophy of education is to be studied and taught as a practical science. Books, in all the departments of education, are to be written by those who are intimately acquainted with the laws of the human mind. In short, a vast population are not only to have instruction communicated to them, but are to be inured to habits of self-education, and to be intrusted with the power of elevating themselves indefinitely in the scale of improvement.

Once more, a national Christian literature is to be created in this country. There is a period, or

there are periods, in the history of every nation, when the great currents of thought receive their direction, when the organs of intellectual life begin to move. Of what immense benefit had it been to England in all subsequent ages, if her Elizabethan era had been a Christian era; if the great men who then toiled in the fields of knowledge, had all been Boyles and Miltons. How different would have been the destiny of France, if her literary men of the age of Louis XIV., had all been Pascals and Fenelons; if that gorgeous constellation of intellect had been tempered with the mild beams of Christianity. How bright would have been the pages of her now blood-stained history! The great lesson which these facts teach us, is to seize the favorable moment — to preoccupy the ground. Our state of probation, in this respect, is not past. With a few exceptions, we have now no literature. We have nothing which can be called a National Literature. It is yet to be created. Those great controlling influences, which lift themselves into the upper firmament of thought, which are like the polar light, always visible, and always to be regarded, are yet to be collected together. Though there are scattered rays of light every where, yet they have not been concentrated into reigning and radiant orbs. The fourth day is not come.

A great object, therefore, an ultimate object, to be kept in view in this country, now and forever, is the highest possible cultivation of science and literature *in connection with* religion. It is an object vast enough for the concentration of every energy, physical, and mental, and moral, which God has given to us. Here may be exhibited a vigor of intellect, a purity of taste, a strength and fervor of religious feeling, all in delightful combination, such as the old world has never yet seen. Now is the time. We have separation enough from the other continents. We have ample sphere. We have no need to engrave our discoveries on columns of stone, to be wearily deciphered by some subsequent age. We may spread them out before a great people. We may write them on ten thousand living and breathing hearts.

Another very important object is, to turn to the best account the triumphs of the Christian religion, which so mark the years that are now passing over us in this country. These exhibitions of the grace and power of the Redeeming Saviour, may be attended with vast collateral benefits, if they are regarded with that importance which they deserve. When the powers of the world to come are visible, when there is an awakened and tender conscience and clearness of perception,

when men feel deeply that they are spiritual and immortal beings, then is a most favorable time to make sure of other great interests. The moral sense may be brought to bear on the whole circle of duties. Liberality of feeling and comprehensiveness of mind may be successfully inculcated. The individuals in question, may learn to look on themselves as the subjects of a new and glorious economy, where they can breathe a fresher air, and obtain occasional glimpses of the higher abodes, where dwell their elder and more favored brethren. The simple personal safety of an individual, is not the only or the great object in view, in these days of the Redeemer's victories. Why should not the sphere of human sympathy be enlarged? Why should not fresh charms be thrown over the whole aspect of human society? Why should not the genial influence pervade all the intercourse of men? Why should not revivals of Christianity exert a strong influence on the purity of civil elections, on the sacredness of judicial proceedings, on the contracts of commerce, and on the durability of a republican government? The genuineness of that religion may well be questioned, which does not moderate the heat of party zeal, which does not diffuse itself into all the departments of civil life, — in short, which does not make men real philanthropists, pure and incorruptible patriots.

But in order to fulfil these great trusts, and to accomplish these high purposes, we must bring some new powers into the field. A hitherto unknown agency must be employed. All the ordinary and accustomed means of changing public opinion, are not sufficient. We have not men enough, of the proper description, in this country. A new order of cultivated intellect is greatly needed. A limited number of eminent scholars, such as Alexandria, and Athens, and London in the days of Anne, contained, is not demanded. A multitude of learned men in the abstract sciences, such as Paris and some of the German cities embrace, would not accomplish the work. Neither would the parish schools and universities of Scotland supply the deficiency. They nurture metaphysical acumen, and strength of reasoning, indeed, but frequently at the expense of benevolent feeling and religious principle. Neither are the excellent common school systems of the northern States of this country, however great the blessings which they diffuse, equal to the enterprise to be accomplished.

A class of men which will be fully adequate to the exigency, may be found in great numbers in this country. They compose the young men who have vigor of body, great strength and firmness of character, an ardent desire to acquire knowledge, a disposition to employ their powers in the diffusion

of knowledge, with little or no pecuniary resources. They constitute a portion of the members of our colleges. Probably from fifty to seventy-five thousand of this class of young men, are pursuing, with various interest, the study of the sciences and of literature, at the lyceums, which are happily extending into all parts of the country. Several thousand more are engaged in a course of study which is habitually connected with manual labor. A still smaller class, but amounting to nearly two thousand, are under the patronage of various societies for the promotion of ministerial education. So that in all the classes enumerated, there are, doubtless, at least one hundred thousand young men in the United States, who are in a course of self-education.

In this description of young men, there are materials of great value, which may be fashioned and moulded for important public service. No other nation on earth is possessed of such a treasure. This country is comparatively new. There is not, as in Europe, a multitude of large estates, which can furnish abundant means of education to the sons of a family. The population, in many parts of the land, is migatory also. Of course, the ancient seats of learning are left behind. Opportunities for a finished education cannot be obtained for many years after the first

settlement of a country. Besides, the population increases with such rapidity, that all the ordinary means for providing facilities for thorough mental discipline, are entirely inadequate. Such being the condition of things in this country, it follows almost of consequence, that there will be a class of men such as I have described, — of firm nerve, of aspiring hope, of powerful understanding, but not in possession of the means of pursuing an uninterrupted course of mental improvement. If they have the benefit of teachers, it is only at intervals. If taught at all, they must in a great measure teach themselves. They are compelled to rely on their own resources. That this class of young men is large, and capable of conferring great benefits on the country, no one can doubt.

They possess some peculiar advantages over all other classes of men. They have confidence in their own power, Whatever of character they possess has been tried in the school of severe discipline. They have breasted the billows, in a great measure, alone. Others have had their doubts resolved by teachers. In the final resort, they have depended on foreign and auxiliary aid. Their own powers have been tasked for a while, but the last weight has been lifted up by the shoulders of others. A clearer eye has penetrated the dark cloud for them. It is sometimes the

fact, that an individual who has been taught by others, has more confidence in the opinion of every one else, than in his own. As a direct consequence, he is wavering, timid, pliable. His character is not compacted and assimilated, but yielding and capricious. His usefulness is of course greatly diminished. But the men of whom I speak, have measured their powers. They have depended very little on extraneous aid.

Another attribute of this class of individuals, is independence of purpose. They are accustomed to form opinions according to the decisions of their own judgments. They are like that description of lawyers, who have deeply studied the elementary principles of their profession, who have followed out these principles into all their ramifications, and who come to conclusions, which are, in a great measure, irrespective of particular facts — facts which may coincide, or may not, with an original principle. Such lawyers are independent, in a great degree, of precedents, or of the opinion of courts. By severe thought and well-directed study, they have formed an independent habit of judgment. Such is the fact with those individuals who have been self-instructers. They may err in opinion, and their purposes may be formed on insufficient grounds; but they are not accustomed to bow to human

authority, nor yield their free agency at the call of party or sect.

Many of this class have, moreover, an invincible perseverance. The resoluteness with which they resolve, has a counterpart in the untiring execution of their schemes. Difficulties only excite a more ardent desire to overcome them. Defeat awakens new courage. Affliction nourishes hope. Disappointment is the parent and precursor of success. A resolution so strong is sometimes formed, that it seems to enter into the nature of the soul itself. It swallows up the whole man, and produces a firmness of determination, an iron obstinacy of pursuit, which nothing but death can break down.

I have seen an individual commence a course of preparatory studies for a liberal education. Weakness of sight compelled him to suspend his labors. After a season of relaxation, he resumed his books, but the recurrence of the same disorder induced him to abandon the pursuit. He then assumed the duties of a merchant's clerk; but the same inexorable necessity followed him. He entered into the engagements of a third profession, with as little success as before. But he was not discouraged. An unconquerable determination took possession of his soul, that, come what would, he would not despair. In the merciful

providence of that Being who "helps those who help themselves," he was directed to the manufacturing of a certain article which was new in that part of the United States, and his labors were rewarded with entire success. In a few years, he became one of the most affluent individuals in his vicinity.

The following facts in relation to a gentleman, who is now a distinguished professor in one of the American colleges, will afford an excellent illustration for my purpose. The father of the individual alluded to, was a poor but intelligent man, gave his children a good common education, and also to some extent the privileges of an academy, which was situated in his native town. The occupation of the son was that of husbandry, especially during the summer months, being employed by some neighboring farmer, as his father did not own a farm. Early in life he acquired a taste for mathematics, and never afterwards did he advance so rapidly in geometry and the kindred studies, in the same number of hours' application to them, as in the evening after ten or twelve hours of hard labor in the field. Having obtained permission to see some of the astronomical instruments belonging to the academy, he became particularly attached to practical astronomy, though he could gain access only to elementary

books. Having made an observation upon an eclipse of the sun, for the purpose of determining the longitude of the place, he commenced the work of resolving the problem with only the general directions and tables in the common books of navigation; and although it cost him several months of severe study, he succeeded in obtaining a correct result, except the errors of the lunar tables. He did not engage in the study of Latin and Greek, until after he had been interested several years in mathematics, and then, mainly because he found that he could not otherwise become a teacher. While occupied in these studies, he supported himself in part by occasionally surveying land, and in part by undertaking the business of a carpenter, having discovered that this art depended on a few simple mathematical principles easily applied. The object which he now had in view, was to prepare himself to enter Harvard college two or three years in advance. He was for the most part his own instructor. The minister of the parish rendered him some assistance; but the whole amount of his recitations in Latin, Greek, Hebrew, French, philosophy, chemistry and natural history, during the whole course of his life thus far, has not been greater than the recitations in college for six months. Having looked forward with much pleasure to the

privileges of a college, and having been nearly prepared to enter a junior class, a sudden termination was put to his literary efforts, by the failure of his eyes, in consequence of applying too closely to the study of the Greek language, during a feeble state of health. For the following year, he was compelled to abandon reading and study almost wholly; and from that time to the present, —a period of sixteen years, — he has rarely been able to read steadily, for one hour, without experiencing much and often severe pain in his eyes, sometimes threatening apoplexy. This affliction, though highly beneficial in its moral influence, was apparently fatal to all his literary plans; yet he could not quite abandon them. In order to obtain a subsistence, he soon after accepted the office of a deputy or assistant to the sheriff of the county. Feeling confident that he must entirely renounce the idea of obtaining a subsistence by literary efforts, and seeing nothing before him but a life of servile labor, he was induced to write and publish a dramatic performance of considerable length, with the hope that it would excite some interest in his favor, wherever his lot might fall. The composition, though bearing the marks of inexperience, contains some passages of true poetic feeling, expressed in powerful language. Soon after this event, he was very unexpectedly

invited to teach the academy in his native village. To acquit himself in this new sphere of duty, he made great efforts. He now gave particular attention to classical literature. Finding that his health had suffered severely from previous efforts, and from the consequences of the dreadful despondency through which he had passed, he was compelled to abandon mathematical and astronomical studies, though it was a most painful sacrifice. Providence, however, furnished a delightful substitute. Natural history then first attracted his attention, and he soon found that he could pursue this study, without injury to his eyes, and with benefit to his health, in the intervals of severer engagements. These pursuits introduced him to the acquaintance of a number of distinguished gentlemen, in various parts of the country, who rendered him very valuable assistance. About this time, the honorary degree of Master of Arts was conferred on him by Yale college. The only pecuniary aid which he ever received, during the course of his education, was ten or twelve dollars. Notwithstanding, when he entered on his professional duties, he had obtained a respectable library, and was free from debt. He is now in a station of great usefulness, and has accomplished several undertakings, which have conferred lasting benefits on the country.

In the two words, INDUSTRY and PERSEVERANCE, is contained the secret of these results. With whatever original powers the Creator may have endowed him, they would have availed him nothing, without an unbending resolution, and severe and unremitted application. His history affords a remarkable instance of the energy of a self-taught man. Those events, in the providence of God, which would have presented insurmountable obstacles to other individuals, were only an excitement to him to urge, with fresh impulse, his onward course.

Another characteristic of self-taught men, is, that they commonly devote themselves to some important practical object. They do not waste their power in pursuing trifles. They do not generally engage in the departments of criticism and metaphysics, which are rewarded with little practical result. It is those who have ample means of subsistence and support, who are beguiled into merely speculative regions, or who devote themselves to undertakings of moderate or of doubtful utility. The case is different with those who are dependent on their own efforts for everything. The first direction of their minds is not so much to the sciences as to the arts. Carpentry in various forms, surveying of land, the manufacture of machinery, the construction of

hydraulic engines, originally offering themselves to their notice, gave a shape to their whole subsequent life. It is to be attributed to this fact, doubtless, that self-taught men are distinguished for *invention* in the arts. Their necessities have given a readiness to their minds, enabling them to seize on those combinations of thought, from which discoveries of great importance have sometimes followed. They have also that power of patient application, which is alike important to discovery. Causes, however, exist, in this description of men, unfavorable to the development of new truths in the abstract sciences.

Self-taught men have also the faculty of clearly communicating their knowledge to others. In this respect, they make excellent teachers. They have worked their own way up the steeps of knowledge, and they can point out the path in which they came. Their attention was not absorbed by the movements of their guide, for they had none. The various objects which they met, they clearly marked and defined. Whatever were the general principles which they adopted, they were not taken upon trust, but were well considered. These individuals may not be able to explain their progress logically, or scientifically, but they can do it intelligently, and to good purpose. They have, also, in a striking degree, the ability to em-

ploy familiar illustrations. For the sake of throwing light upon their course, they have not searched for the images of poetry, nor listened to the personifications of the orator; they have collected the apposite and graphic illustrations and facts, which common people can apprehend and relish, and which are gathered from the rocks and the fields, and from all the incidents of ordinary life. Arthur Young, the self taught English agriculturist, was distinguished as an instructer, insomuch that La Fayette, and the Russian prince Galitzin, and the Russian emperor himself, intrusted lads to his guidance and care. No treatise on astronomy has ever been so popular, and deservedly too, among all descriptions of learners, as that of James Ferguson, who discovered some of the principles of mechanics before he knew that any treatises had been written on the subject. Sir Humphrey Davy was, perhaps, the most popular lecturer who ever addressed a British audience. This was owing not more to the enthusiasm of his character, and his perfect knowledge of his subject, than to the clearness of his expositions, and the transparency and beauty of his illustrations.

There are, notwithstanding these various excellences, several acknowledged deficiencies of character. There are blemishes, both of an intellectual and moral kind, which are almost inseparable

from a plan of self-education, and which are worthy of distinct consideration.

One of the most manifest defects is, want of comprehensiveness of mind. The special advantage of a teacher is, to point out the connections among the different arts and sciences, their relative importance, the natural order of studying them, and the evils of a disproportionate attention to any one of them. The general directions of a judicious teacher are invaluable. They are like a drawing of the heavens to direct the course of the youthful observer among the millions of stars. But a student, without the instructions of an experienced guide, will be liable to seize at once upon the *parts* of a subject, or upon the middle of a treatise, without ever having surveyed his ground, or marked its general bearings. He will thus expend his labor at unimportant points, or in a disproportionate degree. There will be little symmetry and scientific method in his studies. His labors will resemble those of a mechanic, who should place a well-finished door or window in the side of an old and dilapidated dwelling. He has an accurate acquaintance with one branch of a subject, while all around it is in disorder and deformity. And here it is not to be supposed that he will gain a more thorough knowledge of a specific topic, in consequence of giving an exclu-

sive attention to it; and that this will atone for the loss of a general acquaintance with the subject. The study of Webber's trigonometry will furnish as much discipline for the mind, if the student, before he commences his investigation, knows the general relations of the mathematical sciences, as if he had no such general knowledge. A greater amount of mental discipline can be acquired, by studying the sciences in their natural, scientific order, than by attending to them exclusively and at random. A self-taught man is frequently attached, with a kind of favoritism, to a particular study. It absorbs his whole attention, and all other arts or sciences are proportionably undervalued and slighted. The distinguished painter, Hogarth, affected to despise literature, and indeed every species of mental cultivation, except the knowledge of the art of painting; and he even professed himself to have little or no acquaintance with anything else. The celebrated, self-taught anatomist, Dr. John Hunter, was almost entirely ignorant of all learning, even with that connected with his own profession. It has been asserted, that it not unfrequently happened, that upon communicating a supposed discovery of his own to some one of his own more erudite friends, he had the mortification to learn that the same thing had already been discovered by some other well-

known anatomist. Michael Angelo could scarcely spell his name correctly. Benjamin West, the president of the Royal Academy for almost thirty years, never attained to a style of ordinary correctness in his orthography. The disadvantages of the want of an early education, can never, indeed, be entirely overcome. There will always be lingering traces of the deficiency. It is like the acquisition of the pronunciation of a foreign language at a late period in life. The nice peculiarities and shades of sound, cannot, by any effort, be acquired.

Self-taught men are specially liable to an exclusive attachment to pursuits which are obviously and immediately practical. There seems to be a general impression, that poetry, and the kindred branches of literature, furnish little else but amusement, and if read at all, can afford materials for recreation only in the intervals of imperious duty. The tendency to judge in this manner can be accounted for, without any difficulty, from the circumstances in which self-educated men are placed, but the effects are very pernicious. Poetry, in its best sense, is altogether a practical study. Its influence upon the whole mind of a reader, is, in the highest degree, favorable. As history is said to be philosophy teaching by example, so poetry is philosophy teaching by music.

It is good sense, pouring itself out in sweet sounds. It is powerful thought, uttering itself in the voices of angels. A true poet is a philosopher. Milton, and Wordsworth, and Coleridge, understand the phenomena of the human mind, as well as Malebranche, or Reid, or Brown. They have the same capacities of wide generalization, and accurate analysis, and faithful exposition. To read such poets, is as directly conducive to usefulness, as it is to read the ablest metaphysical treatise. We cannot avoid regretting that a man like Dr. Franklin, was not conversant with the best poets. It would have been no injury to his usefulness as a profound observer of human manners. Common sense and the loftiest imagination are perfectly coincident. The same man may condense his ideas into epigrams and proverbs, or pour them out in strains of the most vigorous and harmonious versification. It is recorded of him who "spake three thousand proverbs, that his *songs* were a thousand and five." He that was wiser than all the children of men, who so condensed and embodied his thoughts as to make nearly every word instinct with sentiment, could delightfully sing, "the winter is past, the rain is over and gone, the flowers appear on the earth, the time of the singing of birds is come, and the voice of the turtle is heard in the land." If

Benjamin West had read Chaucer, and Spenser, and Milton, it would not have subtracted in the least from his enthusiasm for his favorite art, while, in a thousand ways, it would have aided his power of conceiving and of delineating on the canvass, the varieties of human character. It would also have relieved the "American" president of the Royal Academy, of the charge of being an illiterate man. John Opie, and Professor Heyne, and Sir Humphrey Davy, showed their good sense in nothing more than by an earnest attention to various branches of literature and science. It is not pretended that every man ought to attempt to become a universal scholar; but that the highest excellence in any one pursuit, is inconsistent with entire ignorance of science and literature generally. Self educated men are peculiarly exposed to danger from this quarter; and instead of banishing works of taste and imagination from the farm-house, and the lyceum, and the manual-labor school, they are the very productions which ought to meet with a welcome reception. It has been said, that very few, if any, discoveries in the abstract sciences, have ever been made by men who have instructed themselves; that the general advancement of knowledge is almost entirely to be ascribed to men who have received a regular education. The labors of Franklin, Rit-

tenhouse, and others, may furnish some exceptions to this remark. Nevertheless, it is generally true, that prior to a particular discovery, an individual must take a wide, general survey of the fields of knowledge, else he may fondly imagine that he has elicited some new truth, which may at length appear to have been long before discovered and classified. Original conception and inventive genius, are in perfect harmony with extensive acquisitions. He, who would advance in any department of knowledge, must know what others have done before him. Instead of decrying the models of taste and genius of other ages and countries, it is the wisdom of every man to study them patiently and thoroughly. This is not a degrading subjection to other minds, which will cramp or annihilate genius. If ever there was an original author, it was John Milton — he who "chose early and began late." But who does not know that Paradise Lost is the spoils of all times and of all countries? If ever there was a universal plunderer, if ever there was a boundless plagiary, it was this same John Milton. He searched the Jewish records, and the Christian economy. He opened the Talmud, and he perused the Koran. He reveled in the fields of Achaia, and on the hill-sides of Judea. He listened to the sweet music under Italian skies, and

to the awful prophecies of the Druids. He drank alike of the Eurotas, and of that "stream which flows fast by the oracle of God."

Another evil to which men of this class are liable is, what may be expressed by the term *rigidness* of character. They sometimes acquire a fierceness of independence, an extreme hardihood of spirit, which nearly destroys their social sympathies, and greatly subtracts from their usefulness. They were themselves nursed in winds and storms. They trampled the most formidable difficulties under their feet, and smote into the dust every enemy which rose up against them. Some of them seemed to triumph over physical impossibilities, and to make the loss of one faculty or sense, the stimulus to push their remaining powers to the ultimate limit of perfection. Hence they infer that this same fortitude and fearlessness belongs, or should belong, to every other human being. Finding a deficiency of these stern qualities, they consider it as an offence almost unpardonable. They do not have compassion on the erring and ignorant. They do not make sufficient allowance for human infirmity. They do not recollect, perhaps, those favorable conjunctures in the providence of God, of which they took advantage, and which may not fall to the lot of others. Those, who have amassed large estates, by vigor-

ous personal effort, are sometimes disposed to carry habits of economy to absolute avarice. Misers are frequently found among this class of men. What is won with hardship is held with a tenacious grasp. Fortunes thus acquired will not be dissipated, at least till the second generation; a generation which knows not the habits of their fathers. An individual, who has become affluent by his own exertions, may acquire habits of genuine philanthrophy, and in that case, is entitled to greater commendation, in consequence of the difficulties which he has overcome; still there is ground to apprehend that his charities will be confined to one or two favorite channels, and that, in the multiplicity of the smaller incidents and occasions of life, he will be far from exhibiting genuine greatness of soul, or real philanthropy of feeling. From the very nature of the case, he will be disposed to ascribe an undue importance to the various contrivances and systems, which are intended to enable an individual, without pecuniary resources, to rise, by personal exertion, to spheres of usefulness and honor.

Intimately connected with the deficiency of character just described, is the habit of overestimating personal or other attainments. Self-confidence is frequently carried too far. A great change in external circumstances, is always at-

tended with imminent danger in the subject of it. Elevate a servant to a throne, impart at once large literary treasures to an ignorant and obscure individual, fill the house of the poor man with wealth; and you take a most effectual way to imbue him with the spirit of arrogance and vanity. Julius Cæsar Scaliger, the great critic, was a self-taught man, but guilty of the most excessive affectation and pride. He was contented to be called Bordoni, and the son of a miniature painter, till he was nearly fifty years old. He then composed an elaborate memoir of his own life, in which he pretended that he was the last surviving descendant of a princely house of Verona. Bandinelli, an Italian sculptor, the son of a goldsmith, and a grandson of a common coalman, having, in the course of his life, acquired great wealth, and having been created a knight by Charles V., is said to have repeatedly changed his name, in order to hide his parentage; and to have fixed at last upon that by which he is generally known, in order that he might appear to have sprung from a noble family. A similar anxiety to secure to himself the reputation of a name, was manifested by the great Spanish dramatist, Lopez de Vega.

One of the especial benefits of a regular education, is to wear away or cut off these excres-

cences of character. It is exceedingly difficult for an individual to retain in quiet possession, within the walls of a college, a great amount of self-conceit or vanity. He comes into contact with rough corners. He is speedily in collision with flint. Powerful minds will meet in fierce competition, and sad will be his lot who brings into debate an unusual share of self-importance. College is a great leveler. Hence it is, that in the last sessions of a collegiate course, the real advance can be measured by contrasting the accompanying modesty and docility, with the opposite qualities, which are frequently visible at the earlier periods. At college, an individual will be compelled to learn what his real talents and attainments are. There is scarcely the possibility of deceiving several keen-eyed equals. There is very rarely an undue degree of sympathy or compassion in a classmate. But in the case of an individual who has educated himself, there is no class of men anywhere in his neighborhood, with which he can compare himself. He grows up alone. An innate vigor is the sap which nourishes him. All the individuals of his acquaintance are, perhaps, clearly his inferiors. At the same time, his injudicious relatives may administer large draughts of flattery to his lips, till he becomes exceedingly wise in his own sight, and the wonder of the age which has

produced him. As correctives of this very obvious evil, our public institutions are admirably adapted, and are, in fact, indispensable.

To the numerous class of young men, in the United States, who are mainly dependent on their own resources for knowledge, or respectability, one of the most important counsels of wisdom, which can be addressed, is, STUDY YOUR OWN CHARACTER AND PROSPECTS. If you are just emerging from obscurity, and breathing the fresh air of an emancipated mind, and thirsting for improvement, and occasionally catching some gleams of light from that undiscovered land of promise which lies in the distant horizon; let not your fancy, nor your excited feelings, lead you captive. Be calm and considerate. A wrong step now may blast your hopes forever. An imperfect estimate of the deficiencies of your character, may impede your course through your whole subsequent life. Be willing to know all the wrong habits which you have cherished, and all the weaknesses of your mind. Study your excellences also, so that you may not cultivate them disproportionately, nor yield to the influence of depression or despair, when you are tempted to place too low an estimate on your powers or acquirements. Be solicitous especially to understand what your physical con-

stitution is, so that you may make it subservient, from the beginning, to the most perfect action of mind and heart, so that all your capacities, intellectual and moral, may be safely, and to the highest degree, developed. If there is an individual of your acquaintance, who knows your past history, and your mind, and who has gone through the course which you are commencing, let it be your object to gain from him a faithful analysis of your character, and an accurate chart of that path, of alternate storm and sunshine, which lies before you. If possible, find an experienced friend, who has an enlarged mind and a liberal heart, and who has no exclusive and favorite study or system of his own. The counsels of such a guide will be inestimable. Next to the blessing of the Almighty, they will ensure success. When all this is done, form a calm and deliberate determination that you will take that path, come what may, which will secure your highest happiness and usefulness. Nourish that inflexible, that iron determination in your heart, without which nothing will be achieved.

In the second place, you will have occasion to guard against underrating knowledge. Learning, if it be thoroughly apprehended and digested, cannot be too highly esteemed. Mere acquisition of facts, indeed, without analysis and reflection, is

positively injurious to the mind. Reading, unattended with contemplation, will produce habits of affectation and pedantry. Nevertheless, those, who are most exposed in this respect, are men of literary leisure, or scholars by profession. You are liable to fall into the opposite error. Compelled by your circumstances to think, relying on the native resources of your own mind, you will learn to look disparagingly on the scholar of comprehensive and ample attainment. But extensive acquisitions are perfectly consistent with profound original investigation. Reading the thoughts of others, will often awaken interesting and valuable trains of reflection. An active mind will assimilate, or correct, or transform the views of the author whom he is reading. The very ability to peruse certain books, implies that the reader himself has powers of reflection and arrangement.

Again, want of immediate success at the commencement of your studies, will, without great care, weaken your resolution, and interrupt your efforts. You have, perhaps, come from the toils of a shop or farm, to the hall of science, and to the pursuits of the scholar. Habits of close investigation cannot be acquired in a day. A wandering mind cannot be fixed without painful effort. Associations acquired in pursuits alien from science and taste, cannot be changed at the mere

bidding of the will. Those lands of beauty and joy, which shall at length open to your view, are at the commencement of your course, shrouded in impenetrable clouds. Algebra and Plato are invested with their full charms only to the practised eye, and to the disciplined intellect. You need to fortify your mind with the strong convictions of duty. Hearkening invariably to the decisions of an enlightened conscience, and the dictates of sound reason, you will at length find that the path of enlarged thought, and of cultivated feeling, and of refined taste, is the path of pleasure.

You will be under the necessity, moreover, of rendering all your efforts at manual labor, and in procuring a supply for your physical wants, subservient to a certain purpose — advancement in mental and moral power. They must be means, not an end. If you are preparing for either of the learned professions, or to influence public influence in any way, you must make all things subordinate to your purpose. It is not your object to become an ingenious mechanic, an efficient merchant, or a practical farmer. Some individuals, who are in a course of education, take more pleasure in the shop or on the farm, than in the study, and are more solicitous to be accounted skilful workmen than powerful scholars. It is the grand design, or it ought to be, of all manual-labor

academies, to promote mental and moral improvement. The connection between the system of bodily exercise, in all its details, and literary progress, should be manifest and prominent. The high cultivation and valuable products of a farm, or a garden, should not be the boast of these institutions. They are but minor and secondary matters. It is the bearing of these things on the development of the mind, and of the heart, which should arrest the attention and be rewarded with the encouragement of every observer. If this object be overlooked, or manifestly neglected, manual-labor schools will be an utter failure, and there will be a universal return to the old systems of mere literary study, without any attention to the physical wants. These schools, to be successful, must furnish better scholars than any others — men of more vigorous understanding, and of more mental discipline. Bodies of perfect symmetry, and of gigantic muscular strength, are worthless in themselves alone. This is a subject of great practical importance. If these institutions fail on any one point, it will be on this; and for a very obvious reason. It is important to direct public attention prominently to the physical part of the arrangements, or that wherein the institution differs from those conducted on the former plan, in order to secure a sufficient amount of

public patronage. Consequently, the principal interest of the community will be concentrated upon that which is obviously of secondary importance. Besides, every individual who engages in physical exercise of any kind, must feel a considerable degree of attachment to this exercise, if he designs to derive from it material benefit. This attachment, by a very common law of the human mind, may increase and become the master passion of his soul.

In regard to such individuals, in the class of self-taught men, who devote their attention to any of the mechanic arts, or to either of the departments in common life and business, though their particular pursuit is to engross their chief attention, yet it is of great importance that they become thoroughly acquainted with the principles of their trade, and with the reasons of the rules according to which they daily practise. They should throw as much mind as possible into all which they undertake. The perfection of machinery, and the excellence of soils, are not the only objects of inquiry. The thorough acquaintance with the philosophy of the art, the means of its advancement, and the ways in which it can confer the greatest possible benefits on mankind — these are the topics which will command the attention of an individual, in proportion as his views are expanded, and his

feelings benevolent. No inconsiderable number of self-taught men have, in this way, conferred invaluable benefits upon mankind. Watt, Fulton, Whitney, Franklin and Davy, will be dear and cherished names, ages hence.

Another class of individuals to whom I have alluded, are pursuing a partial course of self-education, at lyceums. They can devote to literary and scientific pursuits only a limited portion of time, perhaps simply the evenings of the Winter months. By associating all the young men and others in the town, and statedly meeting for the consideration and discussion of important subjects, very great benefits may be derived, provided the association can be made to *exist* for a sufficient length of time. It needs a principle of vitality. To secure any great degree of usefulness, permanence must be given to it. It is a voluntary association, in the strictest sense of the term. But no object of much importance can be secured, without the feeling of responsibleness, or accountability, in some of the individuals concerned. A few lectures on the common and familiar topics of science, or on matters of local history, will be of little service. There must be a plan to secure a permanent and enduring interest. As many individuals as possible must be brought into fervent coöperation. New arrangements of subjects must

be occasionally adopted. Foreign aid, whenever practicable, must be secured. A well chosen and constantly accumulating library must be obtained. And, what is, perhaps, of greater importance than anything else, *all the members must have something to do.* Personal participation is the great secret of exciting and maintaining a permanent interest in an undertaking.

To the individual who will even cursorily look at the state of this country, or the history of individual men, in comparison with the history or condition of any other country, it must appear strikingly obvious, that never were circumstances more favorable than among us for the development and employment of mind. In this country, character and influence can be gained by vigorous individual effort. The whole community are the spectators and judges of the advancement of every individual. No iron hand grasps a man as soon as he steps into the world, and shrivels him up, while another rises simply because he is kept down. No class in the community are raised by the condition of their birth, or by such adventitious circumstances, above one half the minds around them. Free and fresh as the air which he breathes, each individual may start in the career of improvement. Nearly all the circumstances which are calculated to depress and dishearten, arise from extreme

poverty and a very obscure parentage and birth-place, or else from personal considerations. But nothing short of absolute impossibility, in the providence of God, ought to deter any one from engaging in the pursuit of knowledge. Obstacles of fearful magnitude, and of almost every description, have been overcome in innumerable instances.

Have you been deprived of one of your senses? Not a few have vanquished this impediment. The instance of Mr. Nelson, the late learned and classical professor in Rutgers college, New Jersey, as detailed by Prof. McVicar, in his Life of Griffin, is admirably in point. Total blindness, after a long, gradual advance, came upon him about his twentieth year, when terminating his collegiate course. It found him poor, and left him to all appearance both penniless and wretched, with two sisters to maintain, without money, without friends, without a profession, and without sight. Under such an accumulation of griefs, most minds would have sunk; but with him it was otherwise. At all times proud and resolute, his spirit rose at once into what might be called a fierceness of independence. He resolved within himself to be indebted for support to no hand but his own. His classical education, which, from his feeble vision, had been necessarily imperfect, he now determined to complete, and immediately entered upon the

apparently hopeless task, with a view to fit himself as a teacher of youth. He instructed his sisters in the pronunciation of Greek and Latin, and employed one or other constantly in the task of reading aloud to him the classics usually taught in the schools. A naturally faithful memory, spurred on by such strong excitement, performed its oft-repeated miracles; and in a space of time incredibly short, he became master of their contents, even to the minutest points of critical reading. On a certain occasion, a dispute having arisen between Mr. Nelson and the classical professor of the college, as to the construction of a passage in Virgil, from which his students were reading, the professor appealed to the circumstance of a comma in the sentence, as conclusive of the question. "True," said Mr. Nelson coloring, with strong emotion; "but permit me to observe," added he, turning his sightless eyeballs towards the book which he held in his hand, "that in my *Heyne* edition it is a colon, and not a comma." He soon established a school for classical education. The boldness and novelty of the attempt attracted general attention; the lofty confidence he displayed in himself, excited respect; and soon his untiring assiduity, his real knowledge, and a burning zeal, which, knowing no bounds in his devotion to his scholars, awakened somewhat of a corresponding

spirit in their minds, completed the conquest. His reputation spread daily, scholars flocked to him in crowds, and in a few years he found himself in the enjoyment of an income superior to that of any college patronage in the United States. Fernandez Navarete, a distinguished Spanish painter, was seized with an illness, when only two years old, which left him deaf and dumb for life. Yet, in this state, he displayed, from his infancy, the strongest passion for drawing, covering the walls of the apartments with pictures of all sorts of objects, performed with charcoal; and having afterwards studied under Titian, he became eventually one of the greatest artists of his age. He could both read and write, and even possessed considerable learning. Nicholas Saunderson, one of the illustrious men who has filled the chair of Lucasian professor of mathematics at Cambridge, England, when only two years old, was deprived by small-pox, not only of his sight but of his eyes themselves, which were destroyed by abscess. He was sent to the school at Penniston, early in life, and soon distinguished himself by his proficiency in Greek and Latin. He acquired so great a familiarity with the Greek language, as to be in the habit of having the works written in it read to him, and following the meaning of the author as if the composition had been in English; while he showed

his perfect mastery over the Latin, on many occasions, in the course of his life, both by dictating and speaking it with the utmost fluency and command of expression. In 1728, he was created Doctor of Laws, on a visit of George II. to the university of Cambridge, on which occasion he delivered a Latin oration of distinguished eloquence. He published an able and well-known treatise on algebra, a work on fluxions, and a Latin commentary on Sir Isaac Newton's Principia. His senses of hearing and touch were carried to almost incredible perfection. The celebrated mathematician, Euler, was struck with blindness in his fifty-ninth year, his sight having fallen a sacrifice to his indefatigable application. He had literally written and calculated himself blind. Yet, after this calamity, he continued to calculate and to dictate books, at least, if not to write them, as actively as ever. His Elements of Algebra, a work which has been translated into every language of Europe, was dictated by him when blind, to an amanuensis. He published twenty-nine volumes quarto, in the Latin language alone. The mere catalogue of his published works extends to fifty printed pages. At his death, he left about a hundred memoirs ready for the press.

Have you wasted the early part of life, and are you now compelled to commence, if at all, a course

of self-education in the later period of youth, or in middle age? Let not this circumstance, in the least degree, weaken your resolution. Numerous are the instances in which this difficulty has been overcome. Cato, the celebrated Roman censor, showed his force of character very strikingly, by learning the Greek language in his old age. At that time, the study of this tongue was very rare at Rome; and the circumstance renders the determination of Cato, and his success, the more remarkable. It was the first foreign language, also, which he had acquired. Alfred the Great, of England, had reached his twelfth year before he had even learned his alphabet. An interesting anecdote is told of the occasion on which he was first prompted to apply himself to books. His mother, it seems, had shown him and his brothers a small volume, illuminated or adorned in different places with colored letters, and such other embellishments as was then the fashion. Seeing it excite the admiration of the children, she promised that she would give it to him who would first learn to read it. Alfred, though the youngest, was the only one who had the spirit to attempt to gain the prize on such conditions, at least it was he who actually won it; for he immediately, as we are told, went and procured a teacher for himself, and in a very short time was able to claim

the promised reward. When he came to the throne, notwithstanding all his public duties and cares, and a tormenting disease, which scarcely ever left him a moment of rest, it was his custom, day and night, to employ his whole leisure time, either in reading books himself, or in hearing them read by others. He, however, reached his thirty-ninth year before he began to attempt translating anything from the Latin tongue.

The French dramatist, Molière, could only read and write very indifferently when he was fourteen years of age. Dr. Carter, the father of the celebrated Miss Carter, had been originally intended for a grazier, and did not begin his studies till the age of nineteen or twenty. He eventually, however, became a distinguished scholar; and gave his daughters a learned education. Joannes Pierius Valerianus was fifteen years old before he began to learn to read; his parents, indeed, having been so poor, that he was obliged to commence life as a domestic servant. He became one of the most elegant scholars of his time. Van den Vondel, an honored name in Dutch poetry, and the author of works which fill nine quarto volumes, did not commence learning Latin till his twenty-sixth year, and Greek not till some years afterwards. Like many others of the literati of Holland, he began life as a commercial man, and originally kept a hosier's

shop at Amsterdam; but he gave up the business to his wife, when he commenced his career as an author. He died in extreme old age, after having occupied, during a great part of his life, the very highest place in the literature of his country.

John Ogilby, the well known translator of Homer, was originally a dancing-master. He had apprenticed himself to that profession, on finding himself reduced to depend on his own resources, in consequence of the imprisonment of his father for debt. Having been prospered in this pursuit, he was very soon able to release his father, much to his credit, with the first money which he procured. When he had fairly established himself in Dublin, the rebellion of 1641 commenced, and not only swept away all his little property, but repeatedly put even his life in jeopardy. He at last found his way back to London, in a state of complete destitution; notwithstanding he had never received any regular education, he had before this made a few attempts at verse-making, and in his extremity he bethought him of turning his talent in this way to some account. He immediately commenced his studies, which he was enabled to pursue chiefly through the liberal assistance of some members of the university of Cambridge; and although then considerably above forty years of age, he made such progress in Latin,

that he was soon considered able to undertake a poetical translation of Virgil. This work make its appearance in the year 1650. A second edition of it was printed a few years afterwards, with great pomp of typography and embellishments. Such was its success, that the industrious translator actually proceeded, although now in his fifty-fourth year, to commence the study of Greek, in order that he might match his version of the Æneid by others of the Iliad and Odyssey. In due time both appeared. In 1666, he was left, by the great fire of London, once more entirely destitute. With unconquerable courage and perseverance, however, he rebuilt his house and re-established his printing-press. He was now appointed cosmographer and geographical printer to Charles II. He died at the age of seventy-six years.

In the United States, there have been numerous instances of great success in professional pursuits, which the individuals in question did not assume till a very late period in life. An eminent clergyman in a New England city, toiled in one of the most laborious mechanical professions, till he was far in advance of that age when study is generally commenced. He then pursued a regular academical and theological education, almost wholly dependent on his own resources. A gen-

tleman, who is now at the head of one of the most flourishing of the American colleges, was employed on a farm as a hired laborer, till he was beyond that period when most students have completed their collegiate education. The sudden rise of the waters of a neighboring river, which prevented him from proceeding to commence his labors on another farm, was the event, in the providence of God, which determined him to begin his preparation for college. A number of additional striking instances will be found in the course of this volume. A great amount of mind, and of usefulness, is undoubtedly wasted, by the belief that little can be accomplished, if an individual has suffered the first thirty years of his life to pass without improvement. Is it not an erroneous idea, that a man has reached the meridian of his usefulness, and the maturity of his powers, at the age of thirty-five or forty years? What necessity exists for prescribing a limit to the onward progress of the mind? Why set up a bound at a particular time of life more than at another time? Is there not a large number of men, in this country, whose history would prove the contrary doctrine, — who have actually exhibited more vigor of intellect at fifty years of age, than at forty? There are instances among the venerable dead, where the imagination even

gathered fresh power to the close of a long life. That a majority of facts show that maturity of intellect is attained at the age of thirty-five years, is unquestionably owing, in some degree at least, to the influence of the opinion itself. It has operated as a discouragement to effort.

Once more — are you called to struggle with the difficulties arising from obscure parentage and depressing poverty? Here multitudes have obtained most honorable triumphs, and have apparently risen in the scale of honor and usefulness in proportion to the depth of the penury or degradation of their origin. Laplace, a celebrated French mathematician and astronomer, and whom Dr. Brewster supposes posterity will rank next after Sir Isaac Newton, was the son of a farmer in Normandy. The American translator of his great work, the *Mécanique Céleste*, and who has added a commentary in which the amount of matter is much greater than in the original work, while the calculations are so happily elucidated, that a student moderately versed in mathematics, may follow the great astronomer with pleasure to his beautiful results — is entirely a self taught man. A distinguished benefactor of one of our principal theological seminaries, has risen from extreme poverty to the possession of great wealth and respectability. The same was the fact also

with a former lieutenant governor of Massachusetts, who, in the days of his highest prosperity, had none of that pride of fortune and haughtiness of demeanor, which are sometimes consequent upon the unexpected acquisition of a large estate. Several of the most useful and respected citizens of the capital of New England, in the early part of their lives, were entirely destitute of all resources, except the strength of their own unconquerable resolution, and the favor of Providence. The celebrated German metaphysical philosopher, Kant, was the son of a harness maker, who lived in the suburbs of his native city, Königsberg. He had hardly arrived at the age of manhood before he lost both his parents, who had never been able to afford him much pecuniary assistance. His own industry and economy, together with some assistance which he received from his relatives, enabled him to continue his studies. His application was uncommonly great, and the results of it, numerous and extraordinary. He published a work on the Universal Natural History and Theory of the Heavens, or an Essay on the Constitution and Mechanical System of the whole Globe, according to the Newtonian system. In this treatise he anticipated several of the discoveries of the astronomer Herschel. His principal metaphysical work, the "Critique of

Pure Reason," produced an astonishing sensation through all Germany. He was appointed, in 1778, professor of logic and metaphysics, in the university of Königsberg. James Logan, the friend of William Penn, and for some time chief justice and governor of Pennsylvania, was early in life apprenticed to a linen-draper. Previously to his thirteenth year, he had studied the Latin, Greek and Hebrew languages. In the sixteenth year of his age, having happily met with a small book on mathematics, he made himself master of it, without any manner of instruction. Having, also, further improved himself in Greek and Hebrew, he acquired the French, Italian and Spanish languages. Like William Penn, he was a warm and efficient friend of the Indians. He was a man of uncommon wisdom, moderation, prudence, of unblemished morals, and inflexible integrity. Lomonosoff, the father of Russian literature, was descended from a poor family in the government of Archangel. His father was a fisherman, whom he assisted in his labors for the support of his family. In Winter, a clergyman taught him to read. A poetical spirit and a love of knowledge were awakened in the boy, by the singing of the psalms at church, and the reading of the Bible. Without having received any instruction, he conceived the plan of

celebrating the wonders of creation, and the great deeds of Peter I., in songs similar to those of David. He died in 1765. The Russian academy have published his works in six volumes, quarto. He wrote several treatises on grammar, history, mineralogy and chemistry, besides some of the best poetry in the language. Winckelman, one of the most distinguished writers on classic antiquitie and the fine arts, which modern times have produced, was the son of a shoemaker. His father, after vainly endeavoring, for some time, at the expense of many sacrifices, to give him a learned education, was at last obliged, from age and ill health, to retire to a hospital, where he was, in his turn, supported for several years in part by the labors of his son, who, aided by the kindness of the professors, continued to keep himself at college, chiefly by teaching some of his younger and less advanced fellow students. Bartholomew Arnigio, an Italian poet, of considerable eminence, who lived in the sixteenth century, followed his father's trade of a blacksmith, till he was eighteen years old, when he began, of his own accord, to apply to his studies; and by availing himself of the aid sometimes of one friend and sometimes of another, prepared himself at last for entering the university of Padua. Examples of this description it is unnecessary

to multiply. The records of all the learned professions will show many instances admirably in point. Every legislative hall would furnish marked and illustrious specimens. The last degree of penury, the most abject occupations of life, have not presented an insurmountable obstacle to improvement. The aspiring mind will pass over or break down every impediment. Prisons cannot chain it. Dungeons cannot immure it. Racking pains cannot palsy its energy. Opposition will only nurture its powers. The Pilgrim's Progress was written by a tinker in prison; the Saint's Rest, on a bed of excruciating pain; the Apology for the Freedom of the Press, and the Sermons upon Modern Infidelity, in the intervals of one of the fiercest diseases which ever preys upon man. Pascal, that sublime and universal genius, equally at home in the most accurate analysis and in the widest generalization, was visited with an inexorable malady during the greater part of his life. Dr. Watts, the sweet psalmist of ages yet to come, was as weak in body, as he was clear and powerful in intellect. On some occasions, it would seem, that the mind is conscious of its own independence, and asserts its distinct and unfettered existence, amidst the severest ills which can befall its frail and dying companion.

It is worthy of deep and careful consideration, whether our country does not demand a new and higher order of intellect, and whether the class, whose character I have been considering, cannot furnish a vast amount of materials. It is not piety alone which is needed, nor strength of body, nor vigor of mind, nor firmness of character, nor purity of taste; but all these united. Ought not this subject to awaken the attention of our most philanthropic and gifted minds? Ought not social libraries to be collected with this main purpose — to furnish stimulant to call forth all possible native talents and hidden energies? Should not the lyceum lay hold of this subject in every village in our land? Ought not the systems of discipline and instruction at all our colleges, to be framed, and to be administered, with a distinct and declared regard to the benefits which self-taught genius, with the superadded effects of thorough instruction, can confer upon the millions of our country? Every parent, and every instructer, should employ special means to bring his children or his pupils into such circumstances, and place in their way such books and other means, as will develop the original tendencies of their minds, and lead them into the path of high attainment and usefulness. Every educated man is under great responsibilities to bring into the light and to

cherish all the talent which may be concealed in his neighborhood. Genius lies buried on our mountains and in our valleys. Vast treasures of thought, of noble feeling, of pure and generous aspirations, and of moral and religious worth, exist unknown — are never called forth to adorn human nature, and to bless and save mankind. Shall not an effort now be made to bring into action all the available intellect and piety in the country? In the lapse of a few years, more than one hundred millions of human beings, on this continent, will speak the English language. To provide intellectual and moral sustenance for such an amazing population, requires an enlargement of thought and an expansiveness of philanthropy, such as has never yet been exhibited on our earth. One division of this country is as large as that realm over which Augustus Cæsar swayed his sceptre, and which Hannibal tried in vain to conquer. What immense tides of immortal life are to sweep over this country, into the gulf of eternity. We are called to think and to act on a grander scale than ever fell to the lot of man. This nation needs what was conferred on Solomon, "wisdom and understanding exceeding much, and largeness of heart, even as the sand that is on the sea-shore." How pitiable and how deplorable are all the contests between political parties,

and benevolent societies, and religious denominations. While thus contending with one another, we are losing forever the favorable moment for effort; and we are preparing to have heaped upon our heads the curses of an unnumbered posterity. We are the representatives of millions. We are acting for masses of human beings. To live simply as individuals, or as insulated beings, is a great error, and a serious injustice to our posterity. We must take our stand on fundamental principles. We must set those great wheels in motion, which, in their revolution, are to spread light, and life, and joy through the land. While we place our whole dependence on the goodness and the grace of the Ruler of the universe, we must act as those who recollect their origin at the Plymouth rock and from Saxon ancestry, and who are conscious of the high destiny to which Providence calls them.

Let us come up to our great and most interesting work. Let us lift our eyes on the fields, boundless in extent, and white already to the harvest. Here in this age, here in this new world, let the tide of ignorance be stayed; let the great mass of American sentiment be thoroughly purified; let human nature assume its renovated form; let the flame of human intellect rise, and sweetly mingle with the source of all mental light

and beauty; let our character and labors be such, that we shall send forward to the most distant posterity, a strong and steady light. We must take no middle ground. We must bring to the great work of illuminating this country and of blessing mankind, every capability of mind and of heart, which we possess — every possibility of the power which God has given to us.

BIOGRAPHICAL SKETCHES.

ROGER SHERMAN.

"The self-taught Sherman urged his reasons clear."
Humphrey's Poems.

Roger Sherman was born at Newton, Mass., April 19, 1721. His great-grandfather, Captain John Sherman, came from Dedham, England, to Watertown, Massachusetts, about the year 1635. His grandfather, William Sherman, was a farmer, in moderate circumstances. In 1723, the family removed from Newton to Stoughton. Of the childhood and early youth of Sherman, little is known. He received no other education than the ordinary country schools in Massachusetts at that time afforded. He was neither assisted by a public education nor by private tuition. All the valuable attainments which he exhibited in his future career, were the result of his own vigorous efforts. By his ardent thirst for knowledge, and his indefatigable industry, he attained a very commendable acquaintance with general science, the system of logic, geography, mathematics, the general principles of history, philosophy, theology, and particularly law and politics. He was early apprenticed to a shoemaker, and he continued to pursue that occupation for some time after he was twenty-two

years of age. It is recorded of him, that he was accustomed to sit at his work with a book before him, devoting to study every moment that his eyes could be spared from the occupation in which he was engaged. During the Revolutionary War, Mr. Sherman was placed on a Committee of Congress, to examine certain army accounts, among which was a contract for the supply of shoes. He informed the Committee that the public had been defrauded, and that the charges were exorbitant, which he proved by specifying the cost of the leather and other materials, and of the workmanship. The minuteness with which this was done, exciting some surprise, he informed the Committee that he was by trade a shoemaker, and knew the value of every article. He was sometimes accused, but without justice, of being vain of the obscurity of his origin. From the distinguished eminence which he reached, he probably contemplated with satisfaction, that force of mind and that industry, which enabled him to overcome all the obstacles which encompassed his path. For the gratification arising from such a contemplation, no one will be disposed to censure him.

When he was nineteen years of age, his father died. His eldest brother having previously removed to New Milford, Connecticut, the principal charge of the family devolved on him. At this early period of life, the care of a mother, who lived to a great age, and the education of a numerous family of brothers and sisters, brought into grateful exercise his warm, filial and fraternal affections. The assistance subsequently afforded by him to two of his younger brothers, enabled them to obtain the inestimable advantages of a

public education. He continued to reside at Stoughton about three years after the death of his father, principally employed in the cultivation of the farm, and in otherwise providing for the maintenance of the family. Before he was twenty-one, he made a public profession of religion. He thus laid the foundation of his character in piety. That unbending integrity which has almost made his name synonymous with virtue itself, was acquired in the school of Christ and his apostles. Mr. Sherman used to remark to his family, that before he had attained the age of twenty-one years, he had learned to control and govern his passions. His success in these efforts he attributed, in a considerable degree, to Dr. Watts' excellent treatise on this subject. His passions were naturally strong, but he had brought them under subjection to such a degree, that he appeared to be habitually calm and sedate, mild and agreeable. All his actions seem to have been preceded by a rigorous self-examination, and the answering of the secret interrogatories, What is right? — What course ought I to pursue? He never propounded to himself the questions, Will it be popular? — How will it affect my interest? Hence his reputation for integrity was never questioned.

In 1743, he removed with the family to New Milford, a town near New Haven, Connecticut. He performed the journey on foot, taking care to have his shoemaker's tools also transported. He there commenced business as a country merchant, and opened a store in conjunction with his elder brother, which he continued till after his admission to the bar, in 1754. He discontinued his trade as a shoemaker at the time this connection was formed.

In 1745, he was appointed surveyor of lands for the county in which he resided. Astronomical calculations of as early date as 1748, have been discovered among his papers. They were made by him for an almanac, then published in New York, and which he continued to supply for several successive years.

About this time, a providential circumstance led him to aspire after a higher station in life. He was requested by a friend to seek for him legal advice in a neighboring town. To prevent embarrassment and secure the accurate representation of the case, he committed it to paper as well as he could before he left home. In stating the facts, the lawyer observed that Mr. Sherman frequently recurred to a manuscript which he held in his hand. As it was necessary to make an application by way of petition, to the proper tribunal, he desired the paper to be left in his hands, provided it contained a statement of the case from which a petition might be framed. Mr. Sherman reluctantly consented, telling him that it was merely a memorandum drawn up by himself for his own convenience. The lawyer, after reading it, remarked, with an expression of surprise, that, with a few alterations in form, it was equal to any petition which he could have prepared himself, and that no other was requisite. Having then made some inquiries relative to Mr. Sherman's situation and prospects in life, he advised him to devote his attention to the study of the law. But his circumstances and duties did not permit him at once to follow this counsel. The numerous family, which the recent death of his father had made, in a considerable degree, dependent on him for sup-

port and education, required his constant exertions in other employments. But the intimation which he there received, that his mind was fitted for higher pursuits, no doubt induced him at that early period of life, to devote his leisure moments to those studies which led him to honor and distinguished usefulness.

At the age of twenty-eight years, he was married to Miss Elizabeth Hartwell, of Stoughton, Mass., by whom he had seven children. She died in October, 1760. Two of his children died in New Milford, and two after his removal to New Haven. In 1763, he was married to Miss Rebecca Prescott, of Danvers, Mass., by whom he had eight children.

In May, 1759, he was appointed one of the justices of the court of common pleas for the county. He was for many years the treasurer of Yale college. From that institution he received the honorary degree of Master of Arts. After success in some measure had crowned his efforts, he still continued to apply himself to his studies with the most unremitted diligence. Encouragement, instead of elating him, only prompted him to greater effort. In the profession which he had chosen, perhaps more than in any other, men are compelled to rely on their own resources. Such is the competition, so constant is the collision of various minds, that ignorance and incompetency will surely be detected and exposed.

In 1766, he was appointed a judge of the superior court of Connecticut. In the same year, he was chosen an assistant or member of the upper house of the legislature. The first office he sustained for twenty-three years, the last for

nineteen years; after which a law was enacted rendering the two offices incompatible, and he chose to continue in the office of judge. It is uniformly acknowledged by those who witnessed his conduct and abilities on the bench, that he discovered in the application of the principles of law and the rules of evidence to the cases before him, the same sagacity that distinguished him as a legislator. His legal opinions were received with great deference by the profession, and their correctness was almost universally acknowledged. During the last four years in which he was judge, the late Chief-Justice Ellsworth was an associate judge of the same court; and from the period of his appointment, in 1785, until the death of Mr. Sherman, a close intimacy subsisted between them. The elder president Adams remarks that, "It is praise enough to say that Mr. Ellsworth told me that he had made Mr. Sherman his model in his youth. Indeed, I never knew two men more alike, except that the chief-justice had the advantage of a liberal education, and somewhat more extensive reading."

The period of our Revolutionary struggle now drew near. Roger Sherman, as it might have been expected, was one of the few who, from the commencement of hostilities, foresaw what would be the probable issue. He engaged in the defence of our liberties with the deliberate firmness of an experienced statesman, conscious of the magnitude of the undertaking, and sagacious in devising the means for successful opposition.

In August, 1774, Mr. Sherman, in conjunction with Joseph Trumbull, Eliphalet Dyer and Silas Deane, was nominated delegate to the general

congress of the colonies. He was present at the opening of the first congress. He continued a member of this body for the long period of nineteen years, till his death, in 1793, whenever the law requiring a rotation in office admitted it. In his new post of duty he soon acquired distinguished reputation. Others were more admired for popular eloquence, but in that assembly of great men there was no one whose judgment was more respected, or whose opinions were more influential. His venerable appearance, his republican simplicity, the inflexibility of his principles and the decisive weight of his character, commanded universal homage. In the fatiguing and very arduous business of committees, he was indefatigable. He was always thorough in his investigations, and all his proceedings were marked by system. Among the principal committees of which Mr. Sherman was a member, were those to prepare instructions for the army in Canada; to establish regulations in regard to the trade of the United Colonies; to regulate the currency of the country; to furnish supplies for the army; to devise ways and means for providing ten millions of dollars for the expenses of the current year; to concert a plan of military operations for the campaign of 1776; to prepare and digest a form of confederation; and to repair to head-quarters at New York, and examine into the state of the army.

On the 11th of June, 1776, in conjunction with John Adams, Thomas Jefferson, Benjamin Franklin and Robert R. Livingston, Mr. Sherman was appointed on the committee to prepare the Declaration of Independence. The committee was elected by ballot. The Declaration, as it is well

known, was written by Jefferson. What amount of influence was exerted by Sherman, in carrying the measure through the congress, is not certainly known. The records of the proceedings of that illustrious assembly are very imperfect. John Adams says of him, that he was "one of the soundest and strongest pillars of the Revolution." While he was performing the most indefatigable labors in congress, he devoted unremitting attention to duties at home. During the War, he was a member of the governor's council of safety.

In 1784, he was elected mayor of New Haven, an office which he continued to hold during the remainder of his life. About the close of the War, the legislature of Connecticut assigned to a committee of two, the arduous service of revising the laws of the State. Mr. Sherman was one of this committee. In 1787, he was appointed, in conjunction with Dr. Samuel Johnson and Mr. Ellsworth, a delegate to the general convention to form the constitution of the United States. Among his manuscripts a paper has been found, containing a series of propositions, prepared by him for the amendment of the old articles of confederation, the greater part of which are incorporated, in substance, in the new constitution. In the debates in that convention, Mr. Sherman bore a conspicuous part. In a letter to Gen. Floyd, soon after, he says, "Perhaps a better constitution could not be made upon mere speculation. If, upon experience, it should be found to be deficient, it provides an easy and peaceable mode of making amendments. But, if the constitution should be adopted, and the several States choose some of their wisest and best men, from time to time, to

administer the government, I believe it will not want any amendment. I hope that kind Providence, which guarded these States through a dangerous and distressing war, to peace and liberty, will still watch over them, and guide them in the way of safety."

His exertions in procuring the ratification of the constitution in Connecticut, were conspicuous and successful. He published a series of papers, over the signature of "Citizen," which, Mr. Ellsworth says, materially influenced the public mind in favor of its adoption. After the ratification of the Constitution, he was immediately elected a representative of the State in congress. Though approaching the seventieth year of his age, he yet took a prominent part in the great topics of discussion which came before congress.

On the 11th of February, 1790, the Quakers presented an address to the house on the subject of the "licentious wickedness of the African trade for slaves." A long and violent debate occured on the propriety of its being referred to a committee. Some of the southern members opposed it with great vehemence and acrimony. Mr. Scott, of Pennsylvania, replied, in an eloquent appeal to the justice and humanity of the house. Mr. Sherman, perceiving that opposition would merely serve to inflame the already highly excited feelings of members, with his usual calmness, remarked that it was probable the committee would understand their business, and they might, perhaps, bring in such a report as would be satisfactory to gentlemen on both sides of the house. Mr. Sherman and his colleagues were triumphant; forty-three members voting in favor of the commitment of the memorial, and eleven in opposition.

Mr. Sherman uniformly opposed the amendments to the constitution which were at various time submitted to the house. "I do not suppose," said he, "the constitution to be perfect, nor do I imagine, if congress and all the legislatures on the continent were to revise it, that their labors would perfect it." He maintained that the more important objects of government ought first to he attended to; that the executive portion of it needed organization, as well as the business of the revenue and judiciary.

In 1791, a vacancy having occurred in the senate of the United States, he was elected to fill that elevated station.

On the 23d of July, 1793, this great and excellent man was gathered to his fathers, in the seventy-third year of his age. He died in full possession of all his powers, both of mind and of body.

The most interesting lesson which the life of Mr. Sherman teaches us, is the paramount importance of religious principle. His undeviating political integrity was not the result of mere patriotism, or philanthropy. He revolved in a higher orbit. The volume which he consulted more than any other was the Bible. It was his custom to purchase a copy of the scriptures at the commencement of every session of congress, to peruse it daily, and to present it to one of his children on his return. To his familiar acquaintance with this blessed book, much of that extraordinary sagacity which he uniformly exhibited, is to be attributed. The second President Edwards used to call him his "great and good friend, senator Sherman," and acknowledged, that, in the general

course of a long and intimate acquaintance, he was materially assisted by his observations on the principal subjects of doctrinal and practical divinity. "He was not ashamed," says Dr. Edwards, "to befriend religion, to appear openly on the Lord's side, or to avow and defend the peculiar doctrines of grace. He was exemplary in attending all the institutions of the gospel, in the practice of virtue in general, and in showing himself friendly to all good men. With all his elevation and all his honors, he was not at all lifted up, but appeared perfectly unmoved.

"That he was generous and ready to communicate, I can testify from my own experience. He was ready to bear his part of the expense of those designs, public and private, which he esteemed useful; and he was given to hospitality." What an example is here presented for the youthful lawyer and statesman! Would he rise to the most distinguished usefulness, would he bequeath a character and an influence to posterity "above all Greek or Roman fame," let him, like Roger Sherman, lay the foundations in the fear of God, and in obedience to the gospel of Jesus Christ.

Another most important practical lesson which we derive from the life of Mr. Sherman, is the the value of habits of study and meditation. He was not only distinguished for integrity, but for accurate knowledge of history and of human nature — the combined fruit of reading and reflection. "He was capable of deep and long investigation. While others, weary of a short attention to business, were relaxing themselves in thoughtless inattention, or dissipation, he was employed in prosecuting the same business, either

by revolving it in his mind and ripening his own thoughts upon it, or in conferring with others." While laboriously engaged in the public duties of his station, he had, every day, a season for private study and meditation.

The testimonials to his extraordinary worth have been singularly marked and unanimous.

Among his correspondents were Drs. Johnson, (of Stratford,) Edwards, Hopkins, Trumbull, Presidents Dickinson and Witherspoon. Fisher Ames was accustomed to express his opinion by saying, "That if he happened to be out of his seat [in congress] when a subject was discussed, and came in when the question was about to be taken, he always felt safe in voting as Mr. Sherman did, *for he always voted right.*" Dr. Dwight, while instructing the senior class at Yale college, observed, that Mr. Sherman was remarkable for not speaking in debate without suggesting something new and important. Washington uniformly treated Mr. Sherman with great respect and attention. Mr. Macon, a distinguished senator of the United States, once remarked to the Hon. William Reed, of Marblehead, that "Roger Sherman had more common sense than any man he ever knew." The late Rev. Dr. Spring, of Newburyport, was returning from the South, while congress was in session at Philadelphia. Mr. Jefferson acompanied him to the hall, and designated several distinguished members of that body; in the course of this polite attention, he pointed in a certain direction, and exclaimed, "That is Mr. Sherman, of Connecticut, a man who never said a foolish thing in his life." Mr. Sherman was never removed from a single office,

except by promotion, or by act of the legislature requiring a rotation, or rendering the offices incompatible with each other. Nor, with the restrictions alluded to, did he ever fail in his reëlection to any situation to which he had been once elected, excepting that of representative of New Haven in the legislature of the State; — which office, at that period, was constantly fluctuating.

It closing this biographical sketch, it is proper to add, that Mr. Sherman, in his person, was considerably above the common stature; his form was erect and well proportioned, his complexion fair, and his countenance manly and agreeable. In the relations of husband, father and friend, he was uniformly kind and faithful. He was naturally modest; and this disposition, increased, perhaps, by the deficiencies of early education, often wore the appearance of bashfulness and reserve. In conversation relating to matters of importance, he was free and communicative.

The legacy which Mr. Sherman has bequeathed to his countrymen, is indeed invaluable. The Romans never ceased to mention with inexpressible gratitude the heroism, magnanimity, contentment, disinterestedness, and noble public services of him who was called from the plough to the dictator's chair. His example was a light to all the subsequent ages. So among the galaxy of great men who shine along the tracts of our past history, we can scarcely refer to one, save Washington, whose glory will be more steady and unfading than that of Roger Sherman.

HEYNE OF GOTTINGEN.

Christian Gottlob Heyne, a distinguished scholar, was born Sept. 25, 1729, at Chemnitz, in Saxony, whither his father, a poor linen-weaver, had fled from Silesia on account of religious persecutions. The family were often reduced to the miseries of the lowest indigence. In the Memoirs of his own life, Heyne says, "Want was the earliest companion of my childhood. I well remember the painful impressions made on my mind by witnessing the distress of my mother when without food for her children. How often have I seen her, on a Saturday evening, weeping and wringing her hands, as she returned home from an unsuccessful effort to sell the goods which the daily and nightly toil of my father had manufactured." His parents sent him to a child's school in the suburbs of the small town of Chemnitz. He soon exhibited an uncommon desire of acquiring information. He made so rapid a progress in the humble branches of knowledge taught in the school, that, before he had completed his tenth year, he was paying a portion of his school fees by teaching a little girl, the daughter of a wealthy neighbor, to read and write. Having learned everything comprised in the usual course of the school, he felt a strong desire to learn Latin. A son of the schoolmaster, who had studied at Leipsic, was willing to teach him at the rate of four pence a week; but the difficulty of paying so

large a fee seemed quite insurmountable. One day he was sent to his godfather, who was a baker, in pretty good circumstances, for a loaf. As he went along, he pondered sorrowfully on the great object of his wishes, and entered the shop in tears. The good-tempered baker, on learning the cause of his grief, undertook to pay the required fee for him, at which Heyne tells us he was perfectly intoxicated with joy; and as he ran, all ragged and barefoot, through the streets, tossing the loaf in the air, it slipped from his hands and rolled into the gutter. This accident, and a sharp reprimand from his parents, who could ill afford such a loss, brought him to his senses. He continued his lessons for about two years, when his teacher acknowledged that he had taught him all which he himself knew. At this time, his father was anxious that he should adopt some trade; but Heyne felt an invincible desire to pursue his education. He had another godfather, who was a clergyman in the neighborhood; and this person, on receiving the most flattering accounts of Heyne from his last master, agreed to be at the expense of sending him to the principal seminary of his native town of Chemnitz. His new patron, however, doled out his bounty with the most scrupulous parsimony; and Heyne, without the necessary books of his own, was often obliged to borrow those of his companions, and to copy them over for his own use. At last he obtained the situation of tutor to the son of one of the citizens; and this for a short time rendered his condition more comfortable. But the period was come when, if he was to proceed in the career which he had chosen, it was neces-

sary for him to enter the university; and he resolved to go to Leipsic. He arrived, accordingly, in that city, with only about four shillings in his pocket, and nothing more to depend upon, except the small assistance which he might receive from his godfather, who had promised to continue his bounty. He had to wait, however, so long, for his expected supplies from this source, — which came accompanied with much grudging and reproach when they did make their appearance, — that, destitute both of money and books, he would even have been without bread, too, had it not been for the compassion of the maid-servant of the house where he lodged. "What sustained my courage in these circumstances," he remarks, "was neither ambition, nor presumption, nor even the hope of one day taking my place among the learned. The stimulus which incessantly spurred me on, was the feeling of the humiliation of my condition, — the shame with which I shrank from the thought of that degradation which the want of a good education would impose upon me, — above all, the determined resolution of battling courageously with fortune. I was resolved to try whether, although she had thrown me among the dust, I should not be able to rise up by the vigor of my own efforts." His ardor for study only grew the greater as his difficulties increased. For six months he only allowed himself two nights' sleep in the week; and yet all the while, his godfather scarcely ever wrote to him but to inveigh against his indolence, — often actually addressing his letters on the outside "*To M. Heyne, Idler, at Leipsic.*"

In the meantime, while his distress was becom-

ing, every day, more intolerable, he was offered by one of the professors, the situation of a tutor in a family at Magdeburg. Desirable as the appointment would have been in every other respect, it would have removed him from the scene of his studies, and he declined it. He resolved to remain in the midst of all his miseries at Leipsic. Through the favor of Providence, he was in a few weeks recompensed for this sacrifice. The same professor procured for him a situation in the university, similar to the one he had refused in Magdeburg. This, of course, relieved, for a time, his pecuniary wants; but still the ardor with which he pursued his studies continued so great, that at last it brought on a dangerous illness, which obliged him to resign his situation, and very soon completely exhausted his trifling resources, so that on his recovery he found himself as poor and destitute as ever. In this extremity, a copy of Latin verses which he had written having attracted the attention of one of the Saxon ministers, he was induced by the advice of his friends to set out for the court at Dresden, where it was expected that this patronage would make his fortune; but he was doomed only to new disappointments. After having borrowed money to pay the expenses of his journey, all he obtained from the courtier was a few vague promises, which ended in nothing. He was obliged, eventually, after having sold his books, to accept the place of copyist in the library of the Count de Bruhl, with the miserable annual salary of seventy-five dollars. But he had not been idle at Leipsic. He had listened, with great benefit, to the lectures of Ernesti on the principles of interpretation; to

some valuable archælogical and antiquarian lectures; and to the eloquent disquisitions of Bach on Roman antiquities and jurisprudence. At Dresden, besides performing the duties of his situation, he found time to do a little work for the booksellers. For a learned and excellent edition of the Latin poet, Tibullus, he received one hundred crowns. In this way he contrived to live a few years, all the while studying hard, and thinking himself amply compensated for the hardships of his lot, by the opportunities which he enjoyed of pursuing his favorite researches in a city so rich in collections of books and antiquities as Dresden. After he had held his situation in the library for above two years, his salary was doubled; but before he derived any benefit from the augmentation, the seven years' war had commenced. Saxony was overrun by the forces of Frederick the Great, and Heyne's place, and the library itself to which it was attached, were swept away at the same time. He was obliged to fly from Dresden, and wandered about, for a long time, without employment. At last he was received into a family in Wittenberg; but in a short time, the progress of the war drove him from this asylum, also, and he returned to Dresden, where he still had a few articles of furniture, which he had purchased with the little money which he had saved while he held his place in the library. He arrived just in time to witness the bombardment of that capital, in the conflagration of which his furniture perished, as well as some property which he had brought with him from Wittenberg, belonging to a lady, one of the family in whose house he had lived. For this lady he

had formed an attachment during his residence there. Thus left, both of them without a shilling, the young persons determined to share each other's destiny, and they were accordingly united. By the exertions of some common friends, a retreat was procured for Heyne and his wife in the establishment of a M. de Leoben, where he spent some years, during which his time was chiefly occupied in the management of that gentleman's property.

But Providence was now about to visit him with the smiles of prosperity. In 1763, he returned to Dresden. Some time before this, the Professorship of Eloquence in the University of Göttingen had become vacant by the death of John Mathias Gessner. The chair had been offered, in the first instance, to David Ruhnken, one of the first scholars of the age, who declined, however, to leave the University of Leyden, where he had lately succeeded the eminent Hemsterhuis as professor of Greek. But happily, Ruhnken had seen the edition of Tibullus, and another of Epictetus, which Heyne had some time previously published. Ruhnken ventured to suggest to the Hanoverian minister the extraordinary merits of Heyne, and he was accordingly nominated to the professorship. He was soon after appointed first librarian and counsellor. To discharge the functions of these posts required the most multiplied labors. He says of himself, with great candor, that, "till he was professor, he never learned the art it was his duty to teach." But he soon made himself at home in his new duties. By his lectures; by his connection with the Royal Society, founded at Göttingen by Hal-

ler; by his indefatigable participation in the Göttingen Literary Gazette; by the direction of the Philological Seminary, which, under his guidance, was a nursery of genuine philology, and has given to the schools of Germany a great number of good teachers; by all this, together with his editions and commentaries on classic authors, Heyne has deserved the reputation of being one of the most distinguished teachers and scholars which the literary world has seen. The centre of his activity was the poetic department of classical literature. His principal work, which employed him for eighteen years, was his unfinished edition of Homer. He brought the library of Göttingen to such excellence, that it is regarded as the first in Europe, because all the departments are methodically filled. Not merely the fame of his great learning, but the weight of his character and the propriety and delicacy of his deportment, procured him the acquaintance of the most eminent men of his time. George Forster, Huber, and Heeren became his sons-in-law. In dangerous times, the influence which he acquired, and his approved uprightness and wisdom, were of great service to the university. By his efforts, the university and city were spared the necessity of affording quarters to the soldiery, while the French had possession of Hanover, from 1804 to 1805.

An attack of appoplexy terminated his life, on the 14th of July, 1802. He was in the eighty-third year of his age.

WILLIAM WHIPPLE.

The father of Whipple was a native of Ipswich, Massachusetts, and was bred a maltster. He was, also, for some time, engaged in sea-faring pursuits. He married Mary, the eldest daughter of Robert Cutt. She was a lady of excellent sense, and of many pleasing accomplishments. William Whipple was born in Kittery, Maine, in the year 1730. He received his education in one of the public schools in that town, where he was taught reading, writing, arithmetic and navigation. When this deficient course of education was completed, he left school, and immediately embarked on board of a merchant vessel, for the purpose of commencing his destined profession as a sailor. Before he was twenty-one years of age, he obtained the command of a vessel, and performed a number of voyages to Europe, and the West Indies. He was afterwards engaged in the infamous slave traffic. This circumstance in his life admits of no justification. The fact that good men formerly participated in it, only proves how much avarice hardens the human heart and sears the natural conscience. In 1759, Mr. Whipple abandoned the sea, and engaged in mercantile business for some time, with his brother Joseph. He married his cousin, Catharine Moffat, daughter of John Moffat, Esq., a merchant of Portsmouth. At an early period of the revolutionary contest, Mr. Whipple took a decided part in favor of the colonies, and in oppo-

sition to the claims of the parent country. So much confidence was placed in his integrity and firmness, that his fellow citizens frequently placed him in highly important offices. In January, 1775, he was chosen one of the representatives of Portsmouth to the provincial congress, which met at Exeter. By that body he was elected one of the provincial committee of safety. In 1776, he was chosen a delegate to the general congress, which met at Philadelphia. He continued to be reëlected for the three following years. This appointment gave Mr. Whipple the opportunity to record his name among the memorable list of the signers of the Declaration of Independence. The cabin boy, who, thirty years before, had looked forward to the command of a vessel as the consummation of his hopes, now stood among a band of patriots, more illustrious than any which the world had yet seen. He was considered a very useful and active member. In the business of committees, he displayed a most commendable degree of perseverance, ability and application. In 1777, when Burgoyne was rapidly advancing from Canada, the assembly of New Hampshire was convened, and more decisive measures were adopted to defend the country. Two brigades were formed; the command of one of which was given to Gen. Stark, and of the other to Whipple. Whipple was present with his brigade at the battles of Stillwater and Saratoga. He was one of the commissioners appointed by Gates to treat with Burgoyne, and was afterwards selected to conduct the British troops to Boston.

He was accompanied on this expedition by a

negro servant, named Prince, whom he had imported from Africa. On his way to the army, he told his servant, that if they should be called into action, he expected that he would behave like a man of courage. Prince replied, "Sir, I have no inducement to fight; but if I had my liberty, I would endeavor to defend it to the last drop of my blood." The general emancipated him upon the spot. In 1778, he accompanied Gen. Sullivan in his expedition to Rhode Island. For more than two years he was receiver of finance, a most arduous and responsible office, under Robert Morris. About this period, Gen. Whipple began to be afflicted with severe strictures in the breast, which compelled him to decline any further military command. In 1782, he was appointed one of the judges of the superior court of New Hampshire, in which office he continued till his death. In November, 1785, he expired, in consequence of an ossification of the heart. He was in the fifty-fifth year of his age.

On the whole, he seems to have been a very useful man in a period abounding in distinguished talent. The variety of offices which he filled with propriety and ability, is not a little remarkable. Master of a vessel — merchant — leader of militia-men — an interpreter of the old confederation and of the laws of his native State, and a committee-man in congress. He had but little education in the schools. *He taught himself.* His powers of observation on men and things, were turned to the best account. In his manners, Gen. Whipple was courteous and affable, and he appears to have possessed an estimable character for integrity and general morality.

ALEXANDER MURRAY.

Alexander Murray was born in the parish of Minnigaff, in the shire of Kircudbright, Scotland, on the twenty-second of Octobor, 1775. His father was, at this time, nearly seventy years of age, and had been a shepherd all his life, as his own father, and probably his ancestors for many generations had been. Alexander's mother was also the daughter of a shepherd, and was the old man's second wife; several sons, whom he had by a former marriage, being all brought up to the same primitive occupation. His father died in 1797, at the age of ninety-one. He seems have been possessed of considerable natural sagacity, and of some learning.

Alexander received his first lessons in reading, from his father. "The old man," he tells us, "bought him a catechism, (which, in Scotland, is generally printed with a copy of the alphabet in large type prefixed;) but as it was too good a book for me to handle at all times, it was generally locked up, and my father, throughout the Winter, drew the figures of the letters to me, in his *written* hand, on the board of an *old wool card*, with the black end of an extinguished heather stem or root snatched from the fire. I soon learned all the alphabet in this form, and became writer as well as reader. I wrought with the board and brand continually. Then the catechism was presented, and in a month or two, I could

read the easier parts of it. I daily amused myself with copying, as above, the printed letters. In May, 1782, my father gave me a small psalm-book, for which I totally abandoned the catechism. I soon got many psalms by memory, and longed for a new book. Here difficulties arose. The Bible used every night in the family, I was not permitted to touch. The rest of the books were put up in chests. I at length got a New Testament, and read the historical parts with great curiosity and ardor. But I longed to read the Bible, which seemed to me a much more pleasant book; and I actually went to a place where I knew an old loose-leaved Bible lay, and carried it away in piece-meal. I perfectly remember the strange pleasure I felt in reading the histories of Abraham and David. I liked mournful narratives; and greatly admired Jeremiah, Ezekiel and the Lamentations. I pored on these pieces of the Bible in secret for many months, but I durst not show them openly; and as I read constantly and remembered well, I soon astonished all our honest neighbors with the large passages of scripture which I repeated before them. I have forgotten too much of my biblical knowledge, but I can still rehearse all the names of the patriarchs, from Adam to Christ, and various other narratives seldom committed to memory."

His father's whole property consisted only of two or three scores of sheep and four muirland cows. "He had no debts and no money." As all his other sons were shepherds, it was with him a matter of course that Alexander should be brought up the same way; and accordingly, as soon as he had strength for anything, that is, when he was

about seven or eight years of age, he was sent to the hills with the sheep. He however gave no promise of being a good shepherd, and he was often blamed by his father as lazy and useless. He was not stout, and he was near-sighted, which his father did not know. "Besides," says he, "I was sedentary, indolent, and given to books and writing on boards with coals." But his father was too poor to send him to school, his attendance upon which, indeed, was scarcely practicable, unless he boarded in the village, from which their cottage was five or six miles distant. About this time a brother of his mother's, who had made a little money, came to pay them a visit; and hearing such accounts of the genius of his nephew, whose fame was now the discourse of the whole glen, offered to be at the expense of boarding him for a short time in New Galloway, and keeping him at school there. As he tells us himself, he made at first a somewhat awkward figure on this new scene. "My pronunciation was laughed at, and my whole speech was a subject of fun. But I soon gained impudence; and before vacation in August, I often stood *dux* of the Bible class. I was in the mean time taught to write copies, and use paper and ink. But I both wrote and printed, that is, imitated printed letters, when out of school."

His attendance at school, however, had scarcely lasted for three months, when he fell into bad health, and was obliged to return home. For nearly five years after this, he was left again to be his own instructer, with no assistance whatever from any one. He soon recovered his health, but during the long period we have mentioned, he

looked in vain for the means of again pursuing his studies under the advantages which he had for a short time enjoyed. As soon as he became sufficiently well, he was put to his old employment of assisting the rest of the family as a shepherd-boy. "I was still," says he, "attached to reading, printing of words, and getting by heart ballads, of which I procured several.

About this time and for years after, I spent every sixpence, that friends or strangers gave me, on ballads and penny histories. I carried bundles of these in my pockets, and read them when sent to look for cattle on the banks of Loche Greanoch. and on the wild hills in its neighborhood." And thus passed away about three years of his life. All this time the Bible and these ballads seem to have formed almost his only reading; yet even with this scanty library he contrived to acquire, among the simple inhabitants of the glen, a reputation for unrivalled erudition. "My fame for reading and a *memory*, was loud, and several said that I was a 'living miracle.' I puzzled the honest elders of the church with recitals of scripture, and discourses about Jerusalem, &c." Towards the close of the year 1787, he borrowed from a friend L'Estrange's translation of Josephus, and Salmon's Geographical Grammar. This last work had no little share in directing the studies of his future life. "I got immense benefit from Salmon's book. It gave me an idea of geography and universal history, and I actually recollect at this time almost everything which it contains."

A grammar of geography was almost the first thing which James Ferguson studied; although the minds of the two students, differing as they

did in original character, were attracted by different parts of their common manual; the one pondering its description of the artificial sphere, the other musing over its accounts of foreign lands, and of the history and languages of nations inhabiting them. Murray, however, learned also to copy the maps which he found in the book; and, indeed, carried the study of practical geography so far, as to make similar delineations of his native glen, and its neighborhood.

He was now twelve years of age; and as there seemed to be no likelihood that he would ever be able to gain his bread as a shepherd, his parents were probably anxious that he should attempt something in another way to help to maintain himself.

Accordingly, in the latter part of the year 1787, he engaged as teacher in the families of two of the neighboring farmers; for his services in which capacity, throughout the winter, he was remunerated with the sum of sixteen shillings! He had probably, however, his board free in addition to his salary, of which he immediately laid out a part in the purchase of books. One of these was Cocker's Arithmetic, "the plainest of all books," says he, "from which, in two or three months, I learned the four principal rules of arithmetic, and even advanced to the rule of three, with no additional assistance, except the use of an old copy-book of examples made by some boy at school, and a few verbal directions from my brother Robert, the only one of all my father's sons, by his first marriage, that remained with us." He borrowed, about the same time, some old magazines from a country acquaintance. "My memory, now," says he,

"contained a very large mass of historical facts and ballad-poetry, which I repeated with pleasure to myself, and the astonished approbation of the peasants around me." At last, his father having been employed to *herd* on another farm, which brought him nearer the village, Alexander was once more permitted to attend school at Minnigaff, for three days in the week. "I made the most," says he, "of these days; I came about an hour before the school met; I pored on my arithmetic, in which I am still a proficient; and I regularly opened and read all the English books, such as the 'Spectator,' 'World,' &c., brought by the children to school. I seldom joined in any play at the usual hours, but read constantly." This second period of his attendance at school, however, did not last so long as the former. It terminated at the autumn vacation, that is to say, in about six weeks.

In 1790, he again attended school, during the summer, for about three months and a half. It seems to have been about this time that his taste for learning foreign languages first began to develop itself, having been excited by the study of Salmon's Geography. "I had," he writes, "in 1787 and 1788 often admired and mused on the specimens of the Lord's Prayer, in every language, found in Salmon's Grammar. I had read in the magazines and Spectator that Homer, Virgil, Milton, Shakspeare and Newton were the greatest of mankind. I had been early informed, by some elders and good religious people, that Hebrew was the first language. In 1789, at Drigmore, an old woman, who lived near, showed me her psalm-book, which was printed with a

large type, had notes on each page, and likewise, what I discovered to be the Hebrew alphabet, marked letter after letter in the 119th Psalm. I took a copy of these letters, by printing them off in my old way, and kept them." Meantime, as he still entertained the notion of going out as a clerk to the West Indies, he took advantage of a few leisure weeks to begin the study of the French language. He used to remain in school during the middle of the day, while his companions were at play, and compare together the different grammars used in the class.

"About the fifteenth of June," says he, "Kerr, one of my class-fellows, told me that he had once learned Latin for a fortnight, but had not liked it, and still had the Rudiments beside him. I said, Do lend me them; I wish to see what the nouns and verbs are like, and whether they resemble our French. He gave me the book. I examined it for four or five days, and found that the nouns had changes on the last syllables, and looked very singular. I used to repeat a lesson from the French Rudiments every forenoon in school. On the morning of the midsummer fair of Newton Stewart, I set out for school, and accidentally put into my pocket the Latin Grammar instead of the French Rudiments. On an ordinary day, Mr. Cramond would have chid me for this; but on that festive morning he was *mellow*, and in excellent spirits, — a state not good for a teacher, but always desired in him by me, for then he was very communicative. With great glee, he replied, when I told him my mistake, and showed him the Grammar, 'Gad, Sandy, I shall try thee with Latin' and accordingly read over to me no less

than two of the declensions. It was his custom with me to permit me to get as long lessons as I pleased, and never to fetter me by joining me to a class. There was at that time in the school a class of four boys, advanced as far as the pronouns in Latin Grammar. They ridiculed my separated condition; but before the vacation, in August, I had reached the end of the Rudiments, knew a good deal more than they, by reading, at home, the notes on the foot of each page; and was so greatly improved in French, that I could read almost any French book at opening of it. I compared French and Latin, and riveted the words of both in my memory by this practice. When proceeding with the Latin verbs, I often sat in the school all mid-day and pored on the page of Robert Cooper's [another of his school-fellows,] Greek Grammar, — the only one I had ever seen. He was then reading Livy and learning Greek. By the help of his book I mastered the letters, but I saw the sense of the Latin rules in a very indistinct manner. Some boy lent me an old Corderius, and a friend made me a present of Eutropius. There was a copy of Eutropius in the school, which had a literal translation. I studied this last with great attention, and compared the English and Latin. When my lesson was prepared, I always made an excursion into the rest of every book; and my books were not like those of other school-boys, opened only in one place, and where the lesson lay."

All this was the work of about two months and a half before the vacation, and a fortnight after it. During the winter, he employed every spare moment in pondering upon some Latin books. "I

literally read," says he, "Ainsworth's Dictionary throughout. My method was to revolve the leaves of the letter A; to notice all the principal words and their Greek synonymes, not omitting a glance at the Hebrew; to do the same by B, and so on through the book; I then returned from X and Z to A. And in these winter months I amassed a large stock of Latin and Greek vocables. From this exercise I took to Eutropius, Ovid and Cæsar, or at times, to Ruddiman's Grammar. Here I got another book, which from that time has influenced and inflamed my imagination. This was Paradise Lost, of which I had heard, and which I was eager to see. I cannot describe the ardor, or various feelings, with which I read, studied and admired this first-rate work. I found it as difficult to understand as Latin, and soon saw that it required to be parsed, like that language. I account my first acquaintance with Paradise Lost an era in my reading." The next summer was spent still more laboriously than the preceding. He again attended school, where he found a class reading Ovid, Cæsar and Virgil. "I laughed," says he, "at the difficulty with which they prepared their lessons; and often obliged them by reading them over, to assist the work of preparation." He employed his time at home in almost incessant study. "My practice was," he remarks, "to lay down a new and difficult book, after it had wearied me, to take up another, then a third, and to resume this rotation frequently and laboriously. I always strove to seize the sense, but when I supposed that I had succeeded, I did not weary myself with analyzing every sentence." Having introduced himself to Mr. Maitland, the clergyman of the parish, by writing letters to him

in Latin and Greek, he obtained from that gentleman a number of classical books, which he read with great diligence. He was soon so privileged as to obtain a copy of a Hebrew Grammar and of the Hebrew Bible. "I made good use," says he, "of this loan; I read the Bible throughout, and many passages and books of it a number of times." It would appear that he had actually made himself familiar, and that chiefly by his own unassisted exertions, with the French, Latin, Greek and Hebrew languages, and perused several of the principal authors in all of them, within about a year and a half from the time when they were all entirely unknown to him; for it was at the end of May, 1790, that he commenced, as we have seen, the study of French, and all this work had been done by the end of November, in the following year. There is not, perhaps, on record a more extraordinary instance of youthful ardor and perseverance. It may serve to show what is possible to be accomplished.

He was again engaged in teaching during the winter, and received for his labor, as he states, about thirty-five or forty shillings. Every spare hour was devoted to the study of Latin, Greek, Hebrew and French. In the summer of 1792 he returned to school for the last time. The different periods of his school attendance, added together, make about thirteen months, scattered over the space of nearly eight years. Having obtained a copy of Bailey's Dictionary, he found in it the Anglo-Saxon alphabet, and many words in the same dialect. This was his introduction to the study of the northern languages. He also made himself acquainted with many Welsh phrases,

from a small religious treatise in the language, without any dictionary or grammar. This was done by minute observation and comparison of words, terminations and phrases. He also made himself acquainted with the Arabic and Abyssinian alphabets. He was also guilty of writing several thousand lines of an epic poem, "which was not without obligations to Ossian, Milton and Homer." Before he completed the seventh book he threw the unfinished epic into the fire.

Murray was now in his nineteenth year. His most intimate school-companion had gone to the university, for which, no doubt, Murray felt that he was far better qualified, if his utter want of resources had not opposed an insurmountable barrier. He had happened to purchase a volume of the manuscript lectures of a German professor on Roman literature, written in Latin. Having translated these lectures, he carried his translation to Dumfries, but neither of the two booksellers would print them. He then concluded to print some poems by subscription. From this design he was fortunately induced to depart by the advice of the celebrated Robert Burns. "Burns," says he, "treated me with great kindness, and told me if I could get out to college without publishing my poems, it would be much better, as my taste was young and not formed, and I should be ashamed of my productions, when I could write and judge better."

It so happened, that there was in the neighborhood an itinerant tea-merchant, by the name of M'Harg, who knew Murray well, and had formed so high an idea of his genius and learning, that he was in the habit of sounding his fame wherever

he went. Among others to whom he spoke of him, was Mr. James Kinnear, of Edinburgh, then a journeyman printer in the king's printing-office. Mr. Kinnear, with a zeal which does him great credit, immediately suggested that Murray should transmit an account of himself, and some evidence of his attainments, to Edinburgh, which he undertook to lay before some of the literary men of that city. This plan was adopted. Murray was examined by the principal and several of the professors. He so surprised them by the extent and accuracy of his acquaintance with the languages, that measures for his admission to the university, and his maintenance, were immediately taken. These arrangements were principally effected by the exertions of principal Baird. His ardent and most efficient patronage of one, thus recommended to him only by his deserts and his need of patronage, entitles him to the lasting gratitude of all the friends of learning. Murray was, indeed, soon able to support himself. All his difficulties may be said to have been over as soon as he found his way to the university.

For the next ten or twelve years of his life, he resided principally at Edinburgh. No man that ever lived, probably, not excepting Sir William Jones himself, has prosecuted the study of languages to such an extent as Murray. By the end of his short life scarcely one of the oriental or northern tongues remained uninvestigated by him, so far as any sources for acquiring a knowledge of them were accessible. Of the six or seven dialects of the Abyssinian or Ethiopic language, in particular, he made himself much more completely master than any European had been

before. This led to his being selected by the booksellers, in 1802, to prepare an edition of Bruce's Travels, which appeared in 1805, in seven volumes, octavo, and at once placed him in the first rank of the oriental scholars of the age. In 1806, he left Edinburgh, in order to officiate as clergyman in the parish of Urr, in Dumfriesshire. All his leisure moments were devoted to the composition of his stupendous work on the languages of Europe.

In 1812, the professorship of oriental languages in the university of Edinburgh became vacant. Mr. Murray's friends immediately seized the opportunity of endeavoring to obtain for him the situation, of all others, which he seemed destined to fill. The contest was, eventually, carried on between Murray and a single opponent. The result was very doubtful, as the election depended on the town-council, a corporate body of thirty-three individuals. Extraordinary exertions were made by the friends of both candidates. Mr. Salt, the distinguished orientalist, stated that Mr. Murray was the only man in the British dominions, in his opinion, capable of translating an Ethiopic letter which he had brought into the country. Among those who exerted themselves in his behalf, were Dr. James Gregory, Professors Leslie, Playfair, Dugald Stewart, Mr. Jeffrey, Sir Walter Scott, &c. Well was Mr. Murray entitled to say, before he learned the result of the election, "If the efforts of my friends have been exerted for an unsuccessful candidate, they will not be forgotten, *for we have perished in light.*" He was elected by a majority of two votes. On the thirty-first of October, Mr. Murray entered on the discharge

of his duties, though, alas, near the grave. His excessive labors had prostrated his strength. On the thirteenth of April he retired to the bed from which he never rose; before the close of another day he was among the dead. He was in the thirty-eighth year of his age.

His History of European Languages, though left by him in a very imperfect state, is still a splendid monument of his ingenuity and erudition.

STEPHEN HOPKINS.

Stephen Hopkins was born in that part of the then town of Providence, R. I., which now forms the town of Scituate, on the seventh of March, 1707. His great grandfather, Thomas Hopkins, was one of the primitive settlers of Providence. With the first dawnings of active life, Stephen Hopkins was esteemed for his worth, and his regular and useful habits. As an evidence of the propriety of his conduct when only nineteen years of age, his father gave him a deed of gift for seventy acres of land, and his grandfather bestowed on his "loving grandson," an additional tract of ninety acres. He received nothing more than a plain country education, by which he acquired an excellent knowledge of penmanship, and became conversant in the practical branches of the mathematics, particularly surveying. Being the son of a farmer, he continued the occupation of his father, after the death of the latter, and, in 1731, increased his estate in Scituate, by the purchase of adjoining lands. He continued this mode of life until his removal to Providence, in 1748, when he sold his farm, and built a mansion in that town, in which he continued to reside until his death.

In March, 1731–2, Mr. Hopkins made his first appearance in the public service in the humble station of town-clerk of Scituate, from which he rose through almost every gradation of office

to the highest dignity of the State. In May, 1739, he was appointed chief justice of the court of common pleas. He was extensively employed, till an advanced age, in the business of surveying lands. The nicety of his calculations is attested by the following circumstances. In taking the survey of a tract of land, he passed over a plain thickly set with shrubbery. Soon after, he found that his watch, which cost twenty-five guineas in London, was missing. Supposing that the chain had become entangled in the bushes, and the watch thereby pulled from his pocket, he set the course back, and found it hanging on a bush.

In May, 1751, he was appointed, for the fourteenth time, a representative in the assembly. In May, 1756, he was chosen Governor of the State, and continued to occupy this station, at intervals, for seven years.

In 1767, when the politics of the colony were carried to a great excess, Mr. Hopkins magnanimously retired from his office, and a third person was elected. By this measure, harmony was in a great degree, restored.

When the difficulties between the colonies and Great Britain began to grow alarming, Gov. Hopkins took an active, early, and determined part in favor of the colonies. In August, 1774, in connection with the Hon. Samuel Ward, he was appointed to represent Rhode Island, in the general congress.

In the same year, Mr. Hopkins was a member of the assembly of the state. Principally by his influence and exertions, an act was passed, prohibiting the importation of negroes into the colony. In the year before, he emancipated a

number of people of color, whom he had held as slaves.

In May, 1776, Mr. Hopkins was, for the third time, elected to congress. His name is attached to the Declaration of Independence. His signature indicates, on the parchment, a very tremulous hand, and is in perfect contrast to that of the President, John Hancock; this was caused by a nervous affection, with which he had been for many years afflicted, and which compelled him, when he wrote at all, to guide his right hand with his left. He discharged his public duties with great ability and faithfulness. Mr. Hopkins was one of those strong-minded men, who, by indefatigable personal effort, overcome the deficiencies of early education. A common country school, at that period, afforded little more than a knowledge of reading and writing. Upon this foundation, Mr. Hopkins established a character for literature. It is stated that he perused the whole of the great collection of ancient and modern history, compiled about a half century since, by some distinguished scholars in Europe, and that he also read Thurtow's collection of State Papers. As an instance of the retentiveness of his memory, it is mentioned that Mr. Hopkins, on one occasion, sat down and made out his account as the owner of a vessel, without any reference whatever to his books, though many small items were necessarily included. He was esteemed as an excellent mathematician. He was one of the principal observers on the celebrated transit of Venus over the Sun's disc, in June, 1769. He was a member of the American Philosophical Society, and for many years, chancellor of the College of Rhode Island.

In his personal and domestic character, he was an eminent pattern of kindness and affability. A visit, which Gen. Washington made, unattended, to Gov. Hopkins, is stated, by a living witness, to have strongly exhibited the simple, easy, and artless manners of those illustrious men. Mr. Hopkins died calmly, on the 13th of July, 1785, in the 79th year of his age.

PROFESSOR LEE.

Of the attainments and character of this extraordinary man, we can furnish but a very imperfect outline. Even the year of his birth we have not been able to ascertain. His native place is Longnor, a small village, eight miles from Shrewsbury, England. The only education which he received was that of a village school, where nothing more was taught than reading, writing, and arithmetic. This school he left at twelve years of age, to learn the trade of a carpenter and builder, under the care of an ingenious and respectable relative, Mr. Alderman Lee, of Shrewsbury. Here he underwent great hardships. It was not till he was about seventeen years of age that he first conceived the idea of studying a foreign language. His application to the Latin tongue, the first which he acquired, originated in his inability to understand that language, as quoted in English authors. Poverty obstructed his progress, but did not prevent it. A thirst for information created economy; and out of the scanty pittance of his weekly earnings, he purchased, at a book stall, a volume, which, when read, was exchanged for another; and, so by degrees, he advanced in knowledge. Oppressed with cares, without any living assistant whatever, without much stimulus either from hope or fear, seeking concealment rather than the smile of approbation, and very scantily supplied with the

necessary materials, he still pressed on in his course. He had not the privilege of balancing between reading and relaxation; he had to pass from bodily fatigue to mental exertion. During six years, previous to his twenty-fifth year, he omitted none of the hours usually appropriated to manual labor; he retired to rest, regularly, at 10 o'clock at night. He also suffered, during this time, from a disorder in his eyes. As his wages increased, and thereby his abilities to make larger purchases, he attended to the Greek, Hebrew, Chaldee, and Syriac tongues. The loss, by fire, of the tools of his trade, blasted his earthly prospects in that direction, and led him to consider how far his literary acquirements might be employed for the support of himself, and of the partner whom he had recently married. His situation being made known to the Reverend Archdeacon Corbett, of Shrewsbury, that liberal and enlightened clergymen afforded him, not only immediate aid, but a happier introduction to his favorite pursuits. He now exchanged his carpenter's shop for the superintendency of a charity school. Here, however, his hours were not much more at his own disposal. It was about this time that that well known and highly respected oriental scholar, Dr. Jonathan Scott, Persian Secretary to Hastings, Governor General of India, furnished Mr. Lee with an Arabic Grammar, and he had then, for the first time in his life, the pleasure of conversing upon the study in which he was engaged; and it is to this auspicious circumstance, improved, as it was, by the wonderful proficiency of Mr. Lee, on the one hand, (for in a few months, he was capable of reading, writing, and composing

in both Arabic and Persic,) and to the unremitting kindness of Dr. Scott, on the other, that we may attribute Mr. Lee's subsequent engagement with the Church Missionary Society, as Orientalist, his admission at Queen's College, Cambridge, and his ordination as a minister of the Established Church. At the age of thirty-one years, fourteen from the time he had opened a Latin Grammar, he had actually himself *taught seventeen* different languages; viz. Latin, Greek, Hebrew, Chaldee, Syriac, Samaritan, Arabic, Persic, Hindostanee, French, German, Italian, Ethiopic, Coptic, Malay, Sanscrit, and Bengalee. When Mr. Lee entered at Cambridge, he was unacquainted with the mathematics; but in one fortnight, he qualified himself to attend a class which had gone through several books in Euclid; and he soon after discovered an error in the Spherical Trigonometry, usually bound up with Simpson's Euclid, the fourteenth proposition of which Mr. Lee disproved. Simpson's Edition of Euclid is a text book at both Universities, and is the only one usually put into the hands of students, and to which the lectures of the tutors apply. Before he went to college he was conversant with the works of Plato, had made translations into English blank verse from the works of Boethius; and he went through the Golden Verses, bearing the name of Pythagoras. He contented himself with a competent knowledge of mathematics, lest further attention to that seducing science should interfere with those studies in which the highest interests of mankind are involved. He has exhibited a most laudable desire to know the word of God himself, and to impart it to others. The following are some of his efforts for the spiritual good of mankind.

The Syriac New Testament, edited by Mr. Lee, and published, is not a continuation of that begun by Dr. Buchanan; but an entire new work, for which Mr. Lee collated three ancient Syrian MSS., the Syrian Commentary of Syrius, and the texts of Ridley, Jones, and Wetstein.

An edition of the Malay New Testament, from the Dutch edition of 1733; the Old Testament has since been published.

An enlarged and corrected edition of Mr. Martyn's Hindostanee Prayer Book, in conjunction with Mr. Corrie.

A Tract translated into Persian and Arabic, and printed, entitled "The way of Truth and Life," for the use of Mohammedans.

A Malay Tract, for the London Missionary Society; and some Tracts in Hindostanee, for the Society for instructing the Lascars.

A Tract in Arabic, on the new system of education, written by Dr. Bell, and first translated by Michael Sabag, for the Baron de Sacy of Paris.

Dr. Scott having translated the service for Christmas day from the Prayer Book of the Church of England, into Persic, Mr. Lee has added to it the rest of the Liturgy.

A new translation of the Old Testament into Persian, in conjunction with Mirza Khaleel.

An Hindostanee New Testament.

He was some time since preparing an Ethiopic Bible and other works. Mr. Lee has also made a new fount of letter for Hindostanee and Persian printing; and a new fount for an edition of the Syriac Old Testament, for which he collated nine ancient MSS. and one ancient commentary. He has also published in Persian and English the

whole controversy of Mr. Martyn with the Persian literati, with considerable additions of his own.

On a certain occasion, a Memoir of Mr. Henry Kirke White was lent to him; Mr. Lee returned it shortly after with a Latin Poem in praise of Mr. White, a dialogue in Greek on the Christian religion, and a pious effusion in Hebrew; all compiled by himself, when he was upon permanent duty as a member of the local militia for the county. He taught himself to play upon the flute, with almost intuitive readiness. When the Shrewsbury volunteers were raised, he qualified himself, with almost equal readiness, to be one of their military band, all which time he was a member of a ringing society, and also gave lectures upon Gothic architecture. He was no sooner in holy orders than he accepted invitations to preach to the largest congregations. He manifested in the pulpit the ease and self-possession of one long used to the station. Notwithstanding these high attainments, he is a very humble and unassuming man. The resources of his mind are unapparent till called out. He does not seek refined society, but mingles in it, when invited, without effort or embarrassment; and without losing any of his humility, sustains his place in it with ease and independence. His sermons are said to exhibit an air of logical dryness, unfavorable to the unction which should pervade pulpit exercises.

Sometime in the year 1819, on the resignation of Rev. J. Palmer, Mr. Lee was elected Professor of Arabic in the University of Cambridge, and not having been at college the usual time for

taking the degree requisite to standing for the chair, a grace passed the senate of the University to supplicate for a mandamus, which was granted by his Majesty. Most honorable and ample testimonials were given by Lord Teignmouth, Dr. Scott, Mohammed Sheeraz, a learned Persian, Alexander Nicol, librarian of the Bodleian library, Oxford, Mirza Khaleel, a learned Persian, Dr. Wilkins, of the East India-house Library, and others. Mr. Lee has lately been chosen to succeed Dr. Lloyd, as Regius Professor of Hebrew at Cambridge. He has published one edition of an Hebrew Grammar, and has another in the press, as also an Hebrew Lexicon. A work on the interpretation of Scripture generally, and of prophecy in particular, has lately appeared from his pen. He has issued a prospectus of an extensive course of lectures on Hebrew Literature and Philology.

WILLIAM GIFFORD.

William Gifford was born in Ashburton, Devonshire, England, in April, 1757. His father was a seaman, and was, for some time, engaged in the service of his country, as the second in command of a large armed transport. His manner of life was very dissipated. An attempt to excite a riot in a Methodist chapel was the occasion of his being compelled to flee from the country. His mother was the daughter of a carpenter. Her resources were very scanty. They arose from the rent of three or four small fields, which had belonged to her husband's father. "With these, however," says Gifford, "she did what she could for me; and as soon as I was old enough to be trusted out of her sight, sent me to a schoolmistress of the name of Parret, from whom, in due time, I learned to read. I cannot boast much of my acquisitions at this school; they consisted merely of the contents of the 'Child's Spelling Book;' but from my mother, who had stored up the literature of a country town, — which about half a centuary ago, amounted to little more than what was disseminated by itinerant ballad singers, or rather readers, — I had acquired much curious knowledge of Catskin, and the Golden Bull, and the Bloody Gardener, and many other histories equally instructive and amusing." Young Gifford's father returned from sea in 1764. He had acquired considerable prop-

erty, but his habits of dissipation were such that he soon lost nearly the whole of it. He commenced business as a glazier and house-painter. William, now about eight years old, was put to a free school, to learn to read and write and cypher. Here he continued three years, "making most wretched progress," when his father fell sick and died. He died of a ruined constitution, induced by habits of drinking. Unfortunately, the mother of William, in order to support her two children, determined to prosecute her husband's business; for which purpose she engaged a couple of journeymen, who, finding her ignorant of every part of it, wasted her property and embezzled her money. What the consequence of this double fraud would have been, there is no opportunity of knowing, as, in somewhat less than a twelvemonth, she followed her husband to the grave. "She was," says her affectionate son, "an excellent woman, bore my father's infirmities with patience and good humor, loved her children dearly, and died at last, exhausted with anxiety and grief, more on their account than on her own."

"I was not quite thirteen when this happened; my little brother was hardly two; and we had not a relation nor a friend in the world." His brother was now sent to the work-house, and he was himself taken home to the house of a person named Carlile, who was his godfather, and had seized upon whatever his mother had left, under the pretence of repaying himself for money which he had advanced to her. By this person, William, who had before learned reading, writing, and a little arithmetic, was sent again to school, and was beginning to make considerable progress in

the last branch of study; but in about three months his patron grew tired of the expense, and took him home with the view of employing him as a ploughboy. An injury, however, which he had received some years before, on his breast, was found to unfit him for this species of labor; and it was next resolved that he should be sent out to Newfoundland, to assist in a storehouse. But upon being presented to the person who had agreed to fit him out, he was declared to be "too small" — and this scheme had also to be abandoned. "My godfather," says he, "had now humbler views for me, and I had little heart to resist anything. He proposed to send me on board one of the Torbay fishing boats. I ventured, however, to remonstrate against this, and the matter was compromised, by my consenting to go on board a coaster. A coaster was speedily found for me at Brixham, and thither I went, when a little more than thirteen."

In this vessel he remained for nearly a twelvemonth. "It will be easily conceived," he remarks, "that my life was a life of hardship. I was not only a ship-boy on the 'high and giddy mast,' but also in the cabin, where every menial office fell to my lot; yet, if I was restless and discontented, I can safely say it was not so much on account of this, as my being precluded from all possibility of reading; as my master did not possess, nor do I recollect seeing, during the whole time of my abode with him, a single book of any description, except the 'Coasting Pilot.'"

While in this humble situation, however, and seeming to himself almost an outcast from the world, he was not altogether forgotten. He had

broken off all connection with Ashburton, and where his godfather lived; but the "women of Brixham," says he, "who travelled to Ashburton twice a week with fish, and who had known my parents, did not see me without kind concern, running about the beach in a ragged jacket and trowsers." They often mentioned him to their acquaintances at Ashburton, and the tale excited so much commiseration in the place, that his godfather at last found himself obliged to send for him home. At this time he wanted some months of fourteen.

"After the holidays," continues the narrative, "I returned to my darling pursuit — arithmetic; my progress was now so rapid, that in a few months I was at the head of the school, and qualified to assist my master, Mr. E. Furlong, on any extraordinary occasion. As he usually gave me a trifle, at such times, it raised a thought in me that, by engaging with him as a regular assistant, and undertaking the instruction of a few evening scholars, I might, with a little additional aid, be enabled to support myself. I had besides another object in view. Mr. Hugh Smerdon, my first master, was now grown old and infirm; it seemed unlikely that he should hold out above three or four years; and I fondly flattered myself that, notwithstanding my youth, I might possibly be appointed to succeed him. I was in my fifteenth year when I built these castles; a storm, however, was collecting, which unexpectedly burst upon me, and swept them all away.

"On mentioning my little plan to Carlile, he treated it with the utmost contempt; and told me, in his turn, that, as I had learned enough,

and more than enough at school, he must be considered as having fairly discharged his duty (so indeed he had); he added, that he had been negociating with his cousin, a shoemaker of some respectability, who had liberally agreed to take me without fee, as an apprentice. I was so shocked at this intelligence, that I did not remonstrate; but went in sullenness and silence, to my new master, to whom, on the 1st of January, 1772, I was bound till I should attain the age of twenty-one."

Up to this period his reading had been very limited; the only books he had perused, beside the Bible, with which he was well acquainted, having been a black letter romance called Parismus and Parismenes, a few old magazines, and the Imitation of Thomas á Kempis. "As I hated my new profession," he continues, "with a perfect hatred, I made no progress in it, and was consequently little regarded in the family, of which I sank, by degrees, into the common drudge; this did not much disquiet me, for my spirits were now humbled. I did not, however, quite resign my hope of one day succeeding to Mr. Hugh Smerdon, and therefore secretly prosecuted my favorite study, at every interval of leisure. These intervals were not very frequent; and when the use I made of them was found out, they were rendered still less so. I could not guess the motives for this at first, but at length I discovered that my master destined his youngest son for the situation to which I aspired.

"I possessed, at this time, but one book in the world; it was a treatise on algebra, given to me by a young woman who had found it in a lodging-

house. I considered it as a treasure; but it was a treasure locked up; for it supposed the reader to be well acquainted with simple equations, and I knew nothing of the matter. My master's son had purchased 'Fenning's Introduction;' this was precisely what I wanted — but he carefully concealed it from me, and I was indebted to chance alone for stumbling upon his hiding place. I sat up for the greatest part of several nights successively, and, before that he suspected that his treatise was discovered, had completely mastered it; I could now enter upon my own, and that carried me pretty far into the science. This was not done without difficulty. I had not a farthing on earth, nor a friend to give me one; pen, ink, and paper, therefore, (in despite of the flippant remark of Lord Orford,) were for the most part as completely out of my reach, as a crown and sceptre. There was, indeed, a resource; but the utmost caution and secrecy were necessary in applying to it. I beat out pieces of leather as smooth as possible, and wrought my problems on them with a blunted awl; for the rest, my memory was tenacious, and I could multiply and divide by it to a great extent."

No situation, it is obvious, could be more unfavorable for study than this; and yet we see how the eager student succeeded in triumphing over its disadvantages, contriving to write and calculate even without paper, pens, or ink, by the aid of a piece of leather and a blunted awl. Where there is a strong determination to attain an object, it is generally sufficient of itself to create the means; and almost any means are sufficient.

At last, however, Gifford obtained some allevia-

tion of his extreme poverty. He had scarcely, he tells us, known poetry even by name, when some verses, composed by one of his acquaintances, tempted him to try what he could do in the same style, and he succeeded in producing a few rhymes. As successive little incidents inspired his humble muse, he produced several more compositions of a similar description, till he had collected about a dozen of them. "Certainly," says he, "nothing on earth was ever so deplorable;" but such as they were, they procured him not a little fame among his associates, and he began at last to be invited to repeat them in other circles. "The repetitions of which I speak," he continues, "were always attended with applause, and sometimes with favors more substantial; little collections were now and then made, and I have received sixpence in an evening. To one who had long lived in the absolute want of money, such a resource seemed a Peruvian mine. I furnished myself, by degrees, with paper &c., and what was of more importance, with books of geometry, and of the higher branches of algebra, which I cautiously concealed. Poetry, even at this time, was no amusement of mine; it was subservient to other purposes; and I only had recourse to it when I wanted money for my mathematical pursuits."

But even this resource was soon taken from him. His master, having heard of his verse-making, was so incensed both at what he deemed the idleness of the occupation, and especially at some satirical allusions to himself, or his customers, upon which the young poet had unwisely ventured, that he seized and carried away all his books and papers, and even prohibited him, in the

strictest manner, from ever again repeating a line of his compositions. This severe stroke was followed by another, which reduced him to utter despair. The master of the free school, to which he had never given up the hope of succeeding, died, and another person was appointed to the situation, not much older than Gifford, and who, he says, was certainly not so well qualified for it as himself. "I look back," he proceeds, "on that part of my life which immediately followed this event, with little satisfaction; it was a period of gloom and savage unsociability; by degrees I sunk into a kind of corporeal torpor; or, if roused into activity by the spirit of youth, wasted the exertion in splenetic and vexatious tricks, which alienated the few acquaintances which compassion had yet left me."

His discontent and peevishness seem, however, to have gradually given way to the natural buoyancy of his disposition; some evidences of kindly feeling from those around him tended a good deal to dispel his gloom; and, especially, as the term of his apprenticeship drew towards a close, his former aspirations and hopes began to return to him. He had spent, however, nearly six years at his uncongenial employment before any decided prospect of deliverance opened before him. "In this humble and obscure state," says he, "poor beyond the common lot, yet flattering my ambition with day-dreams which perhaps would never have been realized, I was found, in the twentieth year of my age, by Mr. William Cookesley — a name never to be pronounced by me without veneration. The lamentable doggerel which I have already mentioned, and which had passed from mouth to

mouth among people of my own degree had, by some accident or other, reached his ear, and given him a curiosity to inquire after the author." Mr. Cookesley, who was a surgeon, and not rich, having learnt Gifford's history from himself, became so much interested in his favor, that he determined to rescue him from his obscurity.

"The plan," says Gifford, "that occurred to him was naturally that which had so often suggested itself to me. There were, indeed, several obstacles to be overcome. My hand-writing was bad, and my language very incorrect; but nothing could slacken the zeal of this excellent man. He procured a few of my poor attempts at rhyme, dispersed them among his friends and acquaintance, and, when my name was become somewhat familiar to them, set on foot a subscription for my relief. I still preserve the original paper; its title was not very magnificent, though it exceeded the most sanguine wishes of my heart. It ran thus: "A subscription for purchasing the remainder of the time of William Gifford, and for enabling him to improve himself in writing and English grammar.' Few contributed more than five shillings, and none went beyond ten and sixpence, — enough was however collected to free me from my apprenticeship, (the sum my master received was six pounds,) and maintained me for a few months, during which I assiduously attended the Rev. Thomas Smerdon."

The difficulties of the poor scholar were now over, for his patrons were so much pleased with the progress he made during this short period, that upon its expiration they renewed their bounty, and maintained him at school for another year.

"Such liberality," he remarks, "was not lost upon me; I grew anxious to make the best return in my power, and I redoubled my diligence. Now, that I am sunk into indolence, I look back with some degree of skepticism to the exertions of that period." In two years and two months from what he calls the day of his emancipation, he was pronounced by his master to be fit for the university; and a small office having been obtained for him, by Mr. Cookesley's exertions at Oxford, he was entered of Exeter college, that gentleman undertaking to provide the additional means necessary to enable him to live till he should take his degree. Mr. Gifford's first patron died before his protegé had time to fulfil the good man's fond anticipations of his future celebrity; but he afterwards found in Lord Grosvenor, another much more able friend, though it was impossible that any other man could have shown more zeal in advancing his interests. A long and prosperous life was an ample compensation for the toils and hardships of his youth. While at the university, he undertook a poetical translation of the satires of Juvenal, but which was not published till several years afterwards. It is highly creditable to his ability as a satirist and critic. After leaving Oxford, he travelled on the continent for some years, with Lord Belgrave. On his return, he settled in London, and devoted himself to literary pursuits. In 1791, he published The Baviad, a poetical satire; and, in 1794, The Maeviad, a severe animadversion on the degraded state of the drama. These works were virulent and coarse, but display much critical power. In 1797, he became editor of the Anti-Jacobin newspaper.

He soon published an edition of the plays of Massinger; afterwards the plays of Ben Jonson, Ford and Shirley, — all accompanied with notes, and with the lives of the dramatists. In 1809, he commenced the publication of the Quarterly Review, in opposition to the Edinburgh. He conducted it till 1824, when the infirmities of age compelled him to retire. He was the writer of many of the articles in this Review, and generally performed his work with great judgment and ability. He seems, however, to have been wanting in candor and liberal feeling. Probably the circumstances of his early youth, as well as his connection with the tory party in politics, and the high church party in religion, will account for the harshness and ungenerousness of some articles, which appeared in his Review, in relation to the United States. If he had kind feelings, they certainly forsook him when the religion and literature of this country came before his consideration. Mr. Gifford was thorougly a literary man. Besides the works already mentioned, he was author of a translation of the Satires of Persius. He enjoyed an annuity from Lord Grosvenor, and held the office of paymaster of the board of gentlemen-pensioners, with a salary of £300 a year. He was also, for a time, comptroller of the lottery, with a salary of £600 a year. His death took place at his residence near London, December 31, 1826, and he was interred on the 8th of January following, in Westminster Abbey. He had no family. He left the greater part of his fortune to the son of his first kind and most disinterested patron, Mr. Cookesley.

THOMAS BALDWIN.

Among the most numerous and prosperous of the Christian denominations in this country, are the Calvinistic Baptists. In numerical strength they are superior to any other division of the church, with the exception of the Methodists. Their growth, especially in some of the more recently settled portions of the country, has been extremely rapid. This prosperity has been owing very much to the energy and wisdom of a few individuals. The Baptists have not, to a great extent, placed their reliance upon associated effort; their organization, as a denomination, is far less complete than that of any other. Their churches have exhibited, perhaps, more conspicuously even than the Congregational, the republican, or rather democratic principles of equality of rights and community of privileges. Such a state of things is eminently calculated to bring out individual effort, to cherish and develop personal character. Men must have a rallying point. Scattered talent must have a place of convergence. Nothing important can be accomplished in morals and religion, any more than in war and politics, without leaders. If there be no organization on which to recline, some master-spirit will arise. If there be no marshalled host, the people will flock to David in the wilderness. If there be no college or theological seminary, to concentrate public attention and discipline collected talent, some patriarch will

draw around his tent the sons of science or the disciples of Jesus.

Such have been, in the Baptist community, Williams, Backus, Stillman and Baldwin. With great and striking difference as to talent and acquirement, each of those men attained a distinguished rank and exerted an extensive and an enduring influence. Upon each devolved the care, not simply of a church or congregation, but, in an important sense, the care of all the churches in the connection. With no theological seminary, and with not more than one college, the last three named, particularly, labored to supply, so far as unwearied personal effort could do it, the acknowledged deficiency.

THOMAS BALDWIN was born in Bozrah, in the State of Connecticut, December 23, 1753, and was the only son of Thomas and Mary Baldwin, both natives of the same place. Of the early history of his family but little is known. It may, however, be observed, that his father was attached to the military service, and rose to distinction in the then colonial army. He died while his son was a youth. His mother was a woman of talent and piety, and to her faithful and affectionate instructions her son was greatly indebted.

Not much is known of his early history. The traits of character for which he was in manhood remarkable, were, however, very early developed. From infancy his temper was noticed for its unruffled serenity. His mother used to observe that she never knew him, but in a single instance, to betray any signs of impatience; and when, on this occasion, she expressed her surprise, he instantly replied, "Mother, I am not angry."

He very early discovered a taste for reading. Not only did he devote every leisure moment to the improvement of his mind, but also consecrated to this object the hours of labor. Whenever his employments were of such a nature that one of his hands was disengaged, it was occupied with a book. By these habits of incessant application, he very early acquired a stock of valuable though miscellaneous information, which, combined with strong powers of original thinking, seemed in youth to mark him out for distinguished usefulness.

At that time the advantages of education were much less extensively enjoyed in New England than at present. Schools were very rare, and the general modes of instruction palpably defective. As a proof of this it need only be remarked, that when Mr. Baldwin removed to Canaan, N. H., where he afterwards resided, he was generally selected on the Sabbath to read a sermon to the people, who assembled for public worship, because he was the only young man in the town who was sufficiently educated to perform this service acceptably. The mention of this fact is sufficient to show how strong must be his early bias towards intellectual improvement.

When Mr. Baldwin was about sixteen years of age, his mother, who was now a second time married to a very worthy and pious man by the name of Eames, removed to Canaan, New Hampshire. He removed with the family; and this became, for several years, the place of his residence. In September, 1775, he was married to Miss Ruth Huntington, of Norwich, Connecticut. Before he was thirty years of age, Mr. Baldwin was elected to represent the town of Canaan in the General

Court of the State. To this office he was repeatedly reëlected.

In the year 1780, an interesting change took place in the character of Mr. Baldwin. After a season of deep religious anxiety he was enabled joyfully to devote himself to the service of his Redeemer. His views of truth were clear and impressive; his sense of the evil of sin and of the purity of God's law, were such as to lead him to deep humiliation, and to an entire and cordial reliance on the mediation and atonement of the Lord Jesus Christ. Of this period of mental solicitude, Mr. Baldwin has left an interesting and particular memoir. Mr. Baldwin was educated in the principles of the Congregationalists, but about this time, after much deliberation, he united himself to the Baptists. He was ordained as an evangelist, in June, 1783. The following extracts from his journal, show his spirit and manner of life. "I continued my labors with the church in Canaan seven years, during which time, though principally at home on the Sabbath, I spent much of the intervening time in visiting and preaching in the destitute parts of the surrounding country. There were few towns within the space of fifty miles round, in which I did not occasionally preach. In this warfare I went chiefly at my own charges. Some few churches, however, which I visited by appointment of the Association, made me some compensation, and some individuals made me small presents; but I do not recollect that, during the whole of this period, in all my journeyings, I ever received a public contribution. My mode of travelling was on horseback. In pursuing my appointments, I had often to climb the

rugged mountain and descend the deep ravine. These exchanges from rocky steeps to dismal swamps were far from unfrequent at that early period of the settlement of this part of our country. The roads are since so improved, that it would be difficult to persuade the traveller, now-a-days, that they have ever been so bad as the early settlers represent. The people were not, however, so much wanting in kindness as in the means of assisting a travelling minister. As for silver and gold, the greater part of them had none. The cause of this scarcity of money arose from the peculiar circumstances of the times. At the close of the Revolutionary War, the continental currency, which had before depreciated to almost nothing, ceased. The little silver that remained in the coffers of the rich was, with much reluctance, permitted to be drawn from its long sequestered concealment. It hence often happened that the travelling preacher must either beg or go hungry, if he happened to travel where he was not known."

On one occasion, in March, 1790, Mr. Baldwin was called to visit a remote part of New Hampshire, about one hundred miles distant, to assist in the establishment of a church. He left home with only a few shillings, but before the first night the whole was lost. The journey was chiefly through a wilderness, with a few log-cottages to relieve the solitude of the gloomy forest. The snow was more than three feet deep, and the travelling was, consequently, very difficult and dangerous. At length Mr. Baldwin and his friends reached home in safety, after having subsisted on such casual entertainment as they could procure in the wilderness.

During the seven years which he passed in Canaan, the whole of his salary would not average *forty dollars* a year! "Hence," says Mr. Baldwin, "I may say with the apostle, 'These hands have ministered to my necessities, and those that were with me.' I would gladly have devoted myself wholly to the work of the ministry, could I have seen any way in which my family might have been supported."

In the year 1790, Mr. Baldwin received a unanimous invitation to settle in the ministry from Sturbridge, Mass., Hampton, Conn., and from the Second Baptist Church in Boston. He was installed over the latter church in November, 1790. This removal brought him into an almost entirely new sphere of action. From the frontier settlements of New Hampshire, he was removed to the centre of polished and literary society in New England, and placed by the side of such men as the Rev. Drs. Lathrop, Eliot, Howard, Belknap and Thacher, of the Congregational churches, and of the excellent Dr. Stillman, of the First Baptist Church; several of whom were eminent and finished classical scholars. The pulpits of Boston were, perhaps, never more ably filled.

These circumstances added a powerful stimulus to Mr. Baldwin's efforts, and, in fact, created a new era in his life. His early advantages for education, as has been seen, were but scanty. Constant labor had left him but little opportunity to improve them. He was now thirty-eight years of age; a time of life beyond which men do not generally make great advancement in knowledge. Says his biographer, "All the resources upon which, depending on the grace of God, he could

rely in this arduous situation, were sincere desires to be useful, native vigor of mind, a fixed resolution to prepare himself for the duties to which Providence called him, a considerable store of sound reflection on theology, and knowledge of human nature." He saw his deficiencies, and gave himself to his work with great and unrelaxing diligence. He commenced a course of judicious theological and critical study, which enabled him better to serve the church in the pulpit, and more extensively to illustrate and defend her doctrines from the press. The standard of preaching rose in his own denomination every where around him. He assisted his younger brethren in their attempts to acquire the advantages of education. He set before them an example of simple, unaffected piety.

In 1803, Mr. Baldwin commenced the publication of the Massachusetts Baptist Magazine, (afterwards the American Baptist Magazine.) From its commencement to the year 1817, he was its sole editor, and from 1817 to his death he was the senior editor. For many years this was the only Baptist religious periodical in America. To its influence, and to the labors of Mr. Baldwin, by its means, may be ascribed, in a considerable degree, the progress which has been made in his own denomination in acquaintance with each other, in missionary enterprise, and religious knowledge. In 1802, he was appointed to deliver the annual sermon before the Legislature of Massachusetts, on the day of General Election. Three editions of this discourse were published. It was pronounced by the American Review an able and interesting sermon.

In 1803, Union college, at Schenectady, N. Y., conferred on Mr. Baldwin the honorary degree of Doctor of Divinity. He was a trustee, and afterwards a fellow of Brown University, at Providence, R. I., a trustee of Columbia college, at Washington, D. C., and of Waterville college, in Maine. He was also president, at the time of his death, of the Baptist Board of Managers for Foreign Missions. He was a member of the convention for amending the constitution of the Commonwealth of Massachusetts, in the year 1821, and he occasionally addressed the convention with ability and effect.

Dr. Baldwin died suddenly at Waterville, Me., August 29, 1825, whither he had gone to attend the annual commencement of the college. His remains were conveyed to Boston, and interred with every mark of respect and veneration. He had been aware, for some time, that he was drawing near to the grave. "Dr. Baldwin," remarks his biographer, "was not afraid to die. His faith was firm, his hope was unclouded. Like the sun at his setting, what was wanting in meridian splendor, was more than supplied by the mild radiance on which the eye delighted to dwell, and which threw abroad its rich and mellow glories more profusely the nearer it approached to the moment of its departure."

The number of Dr. Baldwin's publications, besides his numerous contributions to periodical works, amounted to thirty-seven. Most of them were single occasional sermons. As a proof of the extent of his labors, it is mentioned that the number of individuals whom he had baptized in Boston and other places, amounted to seven hundred and eighty-eight. The number of marriages

which he solemnized in Boston, was two thousand six hundred and sixty-one.

Much of the excellence of Dr. Baldwin's character is, doubtless, to be attributed to the circumstances in which he was thrown in the providence of God. His residence in the wilds of New Hampshire imparted an energy and decision to his character which never forsook him. The circle of clergymen with whom he associated in the metropolis of New England would naturally tend to correct his taste and enlarge his views. Still it was his own patient, self-denying, vigorous effort, which principally, under God, was the cause of his eminent usefulness. His various controversies sharpened and invigorated his reasoning powers, but they did not create or essentially modify those powers.

It is a most interesting fact in the history of Dr. Baldwin, that he almost commenced anew his literary life at the age of thirty-eight. His success furnishes strong encouragement to that class in the community whose early education has been neglected, and who find themselves in middle life in a state of comparative and humiliating ignorance. It is never too late to read; it is never too late to think. It is always a duty and a privilege to cultivate those noble powers of reasoning and judgment, which our benevolent Creator has given to us. Why may not the intellect be kept burning brightly to the last moment of life? Why may not the stores of knowledge be enlarged beyond the age of sixty? Why may not even the imagination retain, up to the farthest limit of human existence, the freshness and vigor of earlier flights? Why may not the soul spring into a

renovated and immortal life, with unimpaired and unwasted energies? Is not much of that *senility* in intellect, which we frequently observe in old age, to be attributed, not to the constitution of the mind, not to any law of the Creator, but to habits of bodily indulgence; because the individual quietly acquiesced in what he ought to have vigorously met and vanquished? because he tamely submitted to the suggestions of indolence, or to the seductive charms of domestic life? Why not approach the territories of death as Dr. Dwight and Robert Hall did, with firm step and clear-sighted vision, with intelligent humble faith, and with intellect too strong and elastic for the frail earthly tenement any longer to imprison.

DAVID RITTENHOUSE.

See the sage Rittenhouse, with ardent eye,
Lift the long tube and pierce the starry sky;
Clear in his view the circling systems roll,
And broader splendors gild the central pole.
He marks what laws the eccentric wanderers bind,
Copies creation in his forming mind,
And bids, beneath his hand in semblance rise,
With mimic orbs, the labors of the skies.

Vision of Columbus.

DAVID RITTENHOUSE was born near Germantown, Pennsylvania, April 8th, 1732. The family originally came from Guelderland, a province in Holland. They settled in the State of New York, while it was a Dutch colony, and were the first who engaged in the manufacture of paper in this country. The father of David Rittenhouse abandoned the occupation of a paper-maker, when about twenty-nine years of age, and commenced the business of a farmer, on a piece of land which he had purchased in the township of Norriton, about twenty miles from the city of Philadelphia. It seems that he very early designed his son for this useful and respectable employment. Accordingly, as soon as the boy arrived at a sufficient age to assist in conducting the affairs of the farm, he was occupied as an husbandman. This kind of occupation appears to have commenced at an early period of his life. About the fourteenth

year of his age, he was employed in ploughing in his father's fields. His brother Benjamin relates, that while David was thus engaged at the plough, he, (the informant,) then a young boy, was frequently sent to call him to his meals; at which times he repeatedly observed, that not only the fences at the head of many of the furrows, but even his plough and its handles, were covered over with chalked numerical figures. Astronomy was a favorite pursuit. He also applied himself industriously to the study of optics, the mechanical powers, &c. without the advantage of the least instruction. About the seventeenth year of his age, he made a wooden clock of very ingenious workmanship; and soon after, he constructed one of the same materials that compose the common four-and-twenty hour clock, and upon the same principles. He had, much earlier in life, exhibited proofs of his mechanical genius, by making, when only seven or eight years old, a complete water-mill in miniature.

With many valuable traits of character, old Mr. Rittenhouse had no claims to what is termed genius. Hence he did not properly appreciate the early specimens of talent which appeared in his son David. He was, for some time, opposed to the young man's earnest desire to renounce agricultural employments, for the purpose of devoting himself altogether to philosophical pursuits, in connection with some such mechanical profession as might best comport with useful objects of natural philosophy, and be most likely, at the same time, to afford him the means of a comfortable subsistence. At length, however, the father yielded his own inclinations, in order to

gratify what was manifestly the irresistible impulse of his son's genius. He supplied him with money to purchase, in Philadelphia, such tools as were more immediately necessary for commencing the clock-making business, which the son then adopted as his profession. About the same time, young Mr. Rittenhouse erected, on the side of a public road and on his father's land, in the township of Norriton, a small but commodious workshop; and after having made many implements of the trade with his own hands, to supply the deficiency in his purchased stock, he set out in good earnest, as a clock and mathematical instrument maker. From the age of eighteen or nineteen to twenty-five, Mr. Rittenhouse applied himself unremittingly, both to his trade and his studies. Employed throughout the day in his attention to the former, he devoted much of his nights to the latter. Indeed, he deprived himself of the necessary hours of rest; for it was his almost invariable practice, to sit up at his books, until midnight, sometimes much later.

When Mr. Rittenhouse's father established his residence at Norriton, and during the minority of the son, there were no schools in the vicinity at which anything more was taught, than reading and writing in the English language, and the simplest rules of arithmetic. Young Rittenhouse's school education was therefore necessarily bounded by very narrow limits. He was in truth *taught* nothing beyond those very circumscribed studies, which have been named, prior to his ninteenth year. The zeal with which he pursued his studies will be seen from the following extract of a letter, written in September, 1756, be-

ing then little more than twenty-four years of age. "I have not health for a soldier," (the country was then engaged in war,) "and as I have no expectation of serving my country in that way, I am spending my time in the old trifling manner, and am so taken with optics, that I do not know whether, if the enemy should invade this part of the country, as Archimedes was slain while making geometrical figures on the sand, so I should die making a telescope."

An incident now occurred which served to make known more extensively, the extraordinary genius of Rittenhouse. His mother had two brothers, David and Lewis Williams (or William,) both of whom died in their minority. David, the elder of these, pursued the trade of a carpenter, or joiner. Though, like his nephew and namesake, he was almost wholly an uneducated youth, he also, like him, early discovered an unusual genius and strength of mind. After the death of this young man, on opening a chest containing the implements of his trade, which was deposited at Mr. M. Rittenhouse's, (in whose family it is presumed he dwelt,) a few elementary books, treating of arithmetic and geometry were found in it. With these, there were various calculations and other papers, in manuscript; all the productions of David Williams himself, and such as indicated not only an uncommon genius, but an active spirit of philosophical research. To this humble yet valuable coffer of his deceased uncle, Rittenhouse had free access, while yet a very young boy. He often spoke of this acquisition as a treasure, inasmuch as the instruments belonging to his uncle, afforded him the means of gratifying

and exercising his mechanical genius, while the books and manuscripts early led his mind to those congenial pursuits in mathematical and astronomical science, which were ever the favorite objects of his studies. This circumstance, probably, occurred before his twelfth year. "It was during the residence of Rittenhouse with his father at Norriton," says his eulogist, Dr. Rush, "that he made himself master of Sir Isaac Newton's Principia, which he read in the English translation of Mr. Motte. It was here, likewise, that he became acquainted with the science of fluxions; of which sublime invention, he believed himself for a while to be the author, nor did he know for some years afterwards, that a contest had been carried on between Sir Isaac Newton and Leibnitz, for the honor of that great and useful discovery." Mr. Rittenhouse's early zeal in his practical researches into astronomy, prompted him to desire the greatest possible accuracy in the construction of time-pieces adapted to astronomical purposes; and uniting, as he did, operative skill with a thorough knowledge of the principles upon which their construction depends, he was enabled, by his own mechanical ingenuity, to gain a near approach to the perfection to which the pendulum-chronometer may be brought.

"There is nothing peculiar in the mechanism of this time-piece, which requires to be mentioned, except the pendulum; especially the apparatus for counteracting the effects of temperature. For this purpose, there is fastened on the pendulum-rod (which is of iron or steel) a glass tube about thirty-six inches long; bent in the middle into two parallel branches, at the distance of about an

inch from each other; the bend being placed downwards, immediately above the bob of the pendulum. The tube is open at one end, and closed at the other; the arm which is closed at the top is filled, within about two inches of the lower end or bend, with alcohol, and the rest of the tube, within about one half of an inch of the upper extremity, or open end, with mercury; a few inches of the tube, at this extremity, being about twice the width of the rest of the tube.

"Now when the heat of the air increases, it will expand the pendulum-rod and would thus lower the centre of oscillation, and cause the clock to go slower; but this effect is completely counteracted, by the expansion of the alcohol chiefly, and of the mercury in part; which equally raises the centre of oscillation, and thus preserves an equable motion in all the variable temperatures of the atmosphere."

The great accuracy and exquisite workmanship displayed in everything belonging to the profession which Mr. Rittenhouse pursued, that came through his hands, soon became extensively known, in that portion of the United States where he lived. This knowledge of his mechanical abilities, assisted by the reputation which he had already acquired as a mathematician and astronomer, in a short time procured him the friendship and patronage of some eminent scientific men. In mechanics he was entirely *self-taught*. He never received the least instruction from any person, in any mechanic art whatever. If he were to be considered merely as an excellent artist, in an occupation intimately connected with the science of mechanics, *untutored* as he was in

any art or science, he would deservedly be deemed an extraordinary man.

In the bosom of his father's family he long continued to enjoy the tranquil scenes of rural life, amidst the society of an amiable and very intelligent family circle, and surrounded by many estimable neighbors, by whom he was both loved and respected. His chief occupation was that of the profession which he had chosen, but the occasional intervals of leisure from his business, which his assistant workmen enabled him to obtain, he devoted to philosophical and abstract studies.

In February, 1766, Mr. Rittenhouse was married to Miss Eleanor Colston, the daughter of a respectable member of the Society of Friends, who lived in the neighborhood. After her death he married Miss Hannah Jacobs.

In the 1767, among other things, he contrived and made a very ingenious thermometer, constructed on the principle of the expansion and contraction of metals by heat and cold, respectively. This instrument had, under glass, a face upon which was a graduated semi-circle; the degrees of heat and cold corresponded with those of Fahrenheit's thermometer; and these were also correspondingly designated by an index moving on the centre of the arch. Its square, or rather parallelogramical form, its flatness and thinness, and its small size, together with its not being liable to the least sensible injury or irregularity, from any position in which it might be placed, rendered it a very convenient thermometer to be carried in the pocket.

About this time Mr. Rittenhouse made a very ingenious orrery. Though no description in

words, can give an adequate idea, yet we subjoin a part of the philosopher's own account of it. "This machine is intended to have three faces, standing perpendicular to the horizon; that in the front to be four feet square, made of sheet brass, curiously polished, silvered and painted, in proper places, and otherwise properly ornamented. From the centre arises an axis, to support a gilded brass ball, intended to represent the sun. Round this ball move others, made of brass or ivory, to represent the planets. They are to move in elliptical orbits, having the central ball in one focus; and their motions to be sometimes swifter, and sometimes slower, as nearly according to the true law of an equable description of areas as possible, without too great a complication of wheel work. The orbit of each planet is likewise to be properly inclined to those of the others; and their aphelia and nodes justly placed; and their velocities so accurately adjusted, as not to differ sensibly from the tables of astronomy in some thousands of years.

"For the greater beauty of the instrument, the balls representing the planets are to be of considerable bigness; but so contrived that they may be taken off at pleasure, and others, much smaller, and fitter for some purposes, put in their places.

"When the machine is put in motion, by the turning of a winch, there are three indices which point out the hour of the day, the day of the month, and the year answering to that situation of the heavenly bodies which is there represented; and so continually, for a period of five thousands years, either forwards or backwards.

"The two lesser faces are four feet in height,

and two feet three inches in breadth. One of them will exhibit all the appearances of Jupiter and his satellites, their eclipses, transits, and inclinations; likewise all the appearances of Saturn, with his ring and satellites. And the other will represent all the phenomena of the moon, particularly, the exact time, quantity, and duration of her eclipses, — and those of the sun occasioned by her interposition; with a most curious contrivance for exhibiting the appearance of a solar eclipse, at any particular place on the earth, likewise the true place of the moon in the signs, with her latitude, and the place of her apogee in the nodes; the sun's declination, equation of time, &c. It must be understood that all these motions are to correspond exactly with the celestial motions; and not to differ several degrees from the truth, in a few revolutions, as is common in orreries."

Some general idea, perhaps, of this instrument, may be derived from the preceding description; at least it will afford sufficient evidence of the extraordinary philosophical and mechanical powers of Rittenhouse.

Another most important service, which he rendered for the world, was the observation of the *transit of Venus* over the sun's disc, which took place on the third of June, 1769. There had been but one of these transits of Venus over the sun, during the course of about one hundred and thirty years preceding that of 1769; and, for upwards of seven centuries, antecedently to the commencement of that period, the same planet had passed over the sun's disc no more than thirteen times. The next transit of Venus will take place on the 8th of December, 1874, which but few

if any persons then on the stage of life, will have an opportunity of observing. From 1874, down to the 14th of June, A. D. 2984, inclusively, — a period of upwards of eleven centuries, — the same planet will pass over the sun's disc only eighteen times.

The great use of the observation of the transit of Venus is to determine the sun's parallax.* Only two of these phenomena had been *observed* since the creation of the world, and the first had been seen by only two persons — Jeremiah Horrox and William Crabtree, two Englishmen. As the time approached when this extraordinary phenomenon was to manifest itself, the public expectation and anxiety were greatly excited. The American Philosophical Society appointed thirteen gentlemen, to be distributed into three committees, for the purpose of making observations. Rev. Dr. Ewing had the principal direction of the observatory in the city of Philadelphia; Mr. Owen Biddle had the charge of superintending the observations at Cape Henlopen, and Mr. Rittenhouse those at Norriton, near his own residence, on an elevated piece of ground, commanding a good range of horizontal view. It was completely furnished with the necessary instruments, owing very much to the liberality of some scientific gentlemen in England.

* A parallax denotes a change of the apparent place of any heavenly body, caused by being seen from different points of view; or it is the difference between the true and apparent distance of any heavenly body from the zenith. The fixed stars are so remote as to have no sensible parallax; and even the sun and all the primary planets, except Mars and Venus when nearest the earth, are at so great distances from the earth, that their parallax is too small to be observed.

"We are naturally led," says Dr. Rush, in his eulogium, "to take a view of our philosopher, with his associates, in their preparations to observe a phenomenon, which had never been seen but twice before by any inhabitant of our earth, which would never be seen again by any person then living, and on which depended very important astronomical consequences. The night before the long expected day, was probably passed in a degree of solicitude which precluded sleep. How great must have been their joy, when they beheld the morning sun; and the 'whole horizon without a cloud,' for such is the description of the day, given by Mr. Rittenhouse, in his report to Dr. Smith. In pensive silence and trembling anxiety, they waited for the predicted moment of observation; it came, — and brought with it all that had been wished for and expected by those who saw it. In our philosopher, in the instant of one of the contacts of the planet with the sun, there was an emotion of delight so exquisite and powerful, as to induce fainting; — such was the extent of that pleasure, which attends the discovery or first perception of truth."

The observations of Mr. Rittenhouse were received with favor by the whole philosophical world. Mr. Ludlam, one of the vice presidents of the Philosophical Society of London, and an eminent astronomer, thus writes: "No astronomers could better deserve all possible encouragement; whether we consider their care and diligence in making their observations, their fidelity in relating what was done, or the clearness and accuracy of their reasoning on this curious and difficult subject. The more I read the trans-

actions of your Society, (the American Philosophical,) the more I honor and esteem the members of it. *There is not another Society in the world, that can boast of a member such as Mr.* RITTENHOUSE; theorist enough to encounter the problems of determining, from a few observations, the orbit of a comet; and also mechanic enough to make with his own hands, an equal-altitude instrument, a transit-telescope, and a time-piece. I wish I was near enough to see his mechanical apparatus. I find he is engaged in making a curious orrery."

Dr. Maskelyne, Astronomer Royal at Greenwich, says, the "Pennsylvania Observations of the transit were *excellent* and *complete*, and do honor to the gentleman who made them, and those who promoted the undertaking." Dr. Wrangel, an eminent and learned Swedish clergyman, speaking of the Transactions of the American Philosophical Society, says: "Your accurate observations of the transit of Venus, have given infinite satisfaction to our Swedish astronomers."

On the 9th of November, following, Mr. Rittenhouse, in connection with several others, observed a transit of Mercury over the sun's disc.

In the autumn of 1770, Mr. Rittenhouse removed with his family to the city of Philadelphia.

A new phenomenon in the heavens soon after engaged his attention; this was the comet which appeared in June and July, 1770. "Herewith I send you," says Mr. Rittenhouse, writing to Dr. Smith, "the fruit of three or four days' labor, during which I have covered many sheets, and literally drained my ink-stand several times." In another letter he remarks, "I told you that some

intricate calculation, or other, always takes up my idle hours, (he seems to have considered all his hours 'idle' ones which were not taken up in some manual employment,) that I cannot find time to write to my friends as often as I could wish; a new object has lately engrossed my attention. The comet which appeared a few weeks since was so very extraordinary, that I could not forbear tracing it in all its wanderings, and endeavoring to reduce that motion to order and regularity which seemed void of any. This, I think, I have accomplished, so far as to be able to compute its visible place for any given time; and I can assure you that the account from York, of its having been seen again near the place where it first appeared, is a mistake. Nor is Mr. Winthrop of Boston happier, in supposing that it yet crosses the meridian, every day, between twelve and one o'clock, that it has already passed its peripelion, and that it may, perhaps, again emerge from the southern horizon. This comet is now to be looked for nowhere but a little to the north of, and very near to the ecliptic. It rises now a little before day-break; and will continue to rise sooner and sooner every morning."

In March, 1771, the Legislature of Pennsylvania bore the following honorable testimony to the worth of Mr. Rittenhouse.

"The members of assembly, having viewed the orrery constructed by Mr. David Rittenhouse, a native of this province, and being of opinion that it greatly exceeds all others hitherto constructed, in demonstrating the true situations of the celestial bodies, their magnitudes, motions, distances, periods, eclipses, and order, upon the principles of the Newtonian system;

"*Resolved*, That the sum of three hundred pounds be given to Mr. Rittenhouse, as a testimony of the high sense, which this house entertain of his mathematical genius and mechanical abilities, in constructing the said orrery."

In January, 1771, Mr. Rittenhouse was elected one of the Secretaries of the American Philosophical Society. In 1789, the honorary degree of Doctor of Laws was conferred upon Mr. Rittenhouse by the college of New Jersey. In January, 1791, on the death of Dr. Franklin, Dr. Rittenhouse was, with great unanimity, elected President of the American Philosophical Society. In 1795, he was elected a member of the Royal Society of London. This high honor had been previously conferred upon only three or four Americans.

But he did not live long to enjoy his distinguished honors. Soon after his entrance upon the sixty-fifth year of his age, in June, 1796, he died.

The Rev. Dr. Ashbel Green, being pastor of the congregation in which Dr. Rittenhouse had often attended divine worship during the latter years of his life, pronounced an appropriate address at his interment. "This," says Dr. Green, "is emphatically the tomb of genius and science. Their child, their martyr is here deposited, — and their friends will make his eulogy in tears. I stand not here to pronounce it; the thought that engrosses my mind is this; how much more clear and impressive must be the views, which the late spiritual inhabitant of that lifeless corpse now possesses of GOD, — of his infinite existence, of his adorable attributes, and of that eternal blaze of glory which emanates

from Him, — than when she was blinded by her vail of flesh! Accustomed as she was to penetrate far into the universe, — far as corporeal or mental vision here can reach, — still what new and extensive scenes of wonder have opened on her eyes, enlightened and invigorated by death! The discoveries of RITTENHOUSE, since he died, have already been more, and greater, than while he lived. Yes, and could he address us from the spiritual world, his language would be —

> 'All, all on earth is shadow, all beyond
> Is substance. — ' ''

In a conversation with the Rev. Dr. Sproat, Dr. Rittenhouse, a short time before his death, declared that "he could with truth say, that ever since he had examined Christianity and thought upon the subject, he was a firm believer in it; and that he expected salvation *only* in the way of the gospel." He had not attached himself to any particular church. The members of his family were mostly of the Society of Friends. In the last years of his life he read many books on natural and revealed religion. He was much pleased with the "Thoughts of Pascal."

He was a very modest and unassuming man, and in this strikingly resembled Sir Isaac Newton, for whose character and works, he had the highest veneration. His usefulness, though great, was considerably circumscribed by his want of an early education. In consequence of this, he felt an unbecoming diffidence in his own powers, and failed to commit his discoveries and thoughts to writing, which, in a published form, would, doubtless, have eminently increased his usefulness, and the honor of the country which gave him birth.

SAMUEL HUNTINGTON.

Samuel Huntington was born in Windham, in the State of Connecticut, July 3, 1732. The family of Huntingtons emigrated into this country at an early period. Nathaniel Huntington, the father of Samuel, was a plain but estimable man, who followed the occupation of farming, in the town of Windham. His wife was distinguished for piety and native talent, and their numerous children, of whom three devoted themselves to the Christian ministry, were endued with an unusual share of mental vigor. Samuel, however, did not participate in the invaluable benefits which a collegiate education conferred upon his brothers. Being the eldest son, he was destined to pursue the humble but honorable course of his father — the cultivation of the soil. His opportunities for acquiring knowledge were extremely limited, and he received no other education than the common schools of Connecticut at that time afforded. He was gifted, however, with a fine understanding, and with a strong taste for mental improvement. He employed all his leisure hours in reading and study. But even in this limited and imperfect course he was compelled to struggle with great difficulties. Books were then exceedingly rare. We, who live in the nineteenth century, can hardly conceive the extent of the destitution of books, which prevailed even in the time of the Revolutionary war. The whole

library of which some most respectable families were possessed, consisted of a Psalter, one large Bible, and two or three of smaller size, Dilworth's Spelling Book, an Almanac, and perhaps one volume of the Berry Street (London) Sermons. Some families contrived to obtain a few additional works, but the scarcity everywhere was very great. A curious proof of this is found in the Life of President Edwards, in which he acknowledges repeatedly, his great obligations to his foreign correspondents for books and pamphlets, which would not now be considered worth a transmission across the Atlantic. Social or public libraries were almost unknown, especially in the smaller towns.

The labors of the farm, which young Huntington continued to perform until the twenty-second year of his age, necessarily occupied the greater portion of his time, yet his strong mind and unwearied industry enabled him to acquire considerable scientific information upon various subjects. At the age of twenty-two years, when he abandoned his agricultural pursuits to engage in the study of the law, he had acquired, principally from his own unassisted exertions, an excellent common education. He attained considerable acquaintance with the Latin language, but it does not appear that he directed his attention to any other foreign tongue.

He early manifested a strong desire to study the legal profession; he resolved "to thread the maze of the law," with no other guide than his own judgment and perseverance, and to attain to distinguished usefulness by industry and self-denial. It is probable that the method adopted

by him arose from pecuniary difficulties. He did not attempt to seek the benefits of legal tuition in the office of a lawyer, but borrowed the necessary books from colonel Jedediah Elderkin, a member of the profession, residing in Norwich. Having attained a competent knowledge of the general principles of law, he commenced his professional career in the town of Windham. In 1760, he removed to Norwich. His reputation as an advocate and a man of talents was soon established. Aided by a candid and deliberate manner, which appeared in some degree constitutional, few lawyers commanded a more extensive practice. He was known to be a man of good sense, integrity and punctuality. In 1774, Mr. Huntington was appointed an associate judge of the superior court. In 1775, in conjunction with Roger Sherman, Titus Hosmer, Oliver Wolcott and William Williams, Mr. Huntington took his seat in the general congress. In July, 1776, he affixed his name to the immortal instrument which declared our independence. He retained his seat in congress till 1780.

His stern integrity and inflexible patriotism rendered him a prominent member, and attracted a large portion of the current business of the house, especially that which was assigned to committees. On the 28th of September, 1779, on the resignation of John Jay, Mr. Huntington was chosen to the highest civil dignity of the country — that of president of congress. In 1781, he declined a reappointment, on account of ill health. He then resumed his judicial functions in the supreme court of Connecticut. In 1783, he again took his seat in congress. In 1784, he was appointed chief-

justice of the supreme court of Connecticut. He presided on the bench with great ability, integrity and reputation. In 1786, he succeeded governor Griswold as chief magistrate of the State, and continued to be reëlected with singular unanimity till his death. He closed his life at Norwich, on the 5th of January, 1796, in the sixty-fourth year of his age. His death was tranquil and exemplary, and his religious confidence generally firm and unwavering.

For many years he had been a professor of religion, and appeared to derive great delight from the doctrines and ordinances of the gospel. When the congregation with which he worshipped was destitute of preaching, he officiated as a reader and conductor of the services.

Perhaps no man ever possessed greater mildness and equanimity than governor Huntington. A living witness attests, that during a residence of twenty-four years in his family, he never, in a single instance, exhibited the slightest symptom of anger, nor spoke one word calculated to wound the feelings of another, or to injure an absent person. Notwithstanding his elevation, he had none of that false pride, which dignity and honors are so apt to create. After performing the business of his office and instructing numerous students in the principles of law he was accustomed, if any garden or household utensils had been broken, to repair them with his own hands; and rather than require the attendance of a servant for any trivial services, he would perform them himself. Being a man of great simplicity and plainness of manners, he maintained that it was a public duty to exhibit such an example as might,

so far as his individual efforts could avail, counteract the spirit of extravagance, which had begun to appear. He was very economical, though not parsimonious, in his personal habits and domestic arrangements. His distinguishing characteristics, both in conversation and in epistolary correspondence, were brevity and caution.

In 1762, he was married to Miss Martha Devotion, a daughter of the very respectable clergyman of the town of Windham. Having no children of their own, they adopted two children of their brother's, the Rev. Joseph Huntington. The late Samuel Huntington, governor of Ohio, and Mrs. Griffin, the lady of the venerable president of Williams college, were the individuals who supplied the deficiency in his family, and were privileged with his excellent example and instructions.

WILLIAM EDWARDS.

William Edwards, the celebrated Welsh engineer, was born in 1719, in the parish of Eglwysan, in Glamorganshire. He lost his father, who was a farmer, when he was only two years old; but his mother continued to hold the farm, and was in this manner enabled to bring up her family, consisting of two other sons and a daughter, besides William, who was the youngest. Her other sons, indeed, were soon old enough to take the chief part of the charge from her hands. William was taught in the mean time to read and write Welsh; and this was all the education which he seems to have received. When about the age of fifteen, he first began to employ himself in repairing the stone fences of the farm; and in this humble species of masonry he soon acquired uncommon expertness. The excellent work he made, and the despatch with which he finished it, at last attracted the notice of the neighboring farmers; and they advised his brothers to keep him at this business, and let him employ his skill, when wanted, on other farms, as well as their own. After this he was for some time constantly engaged; and he regularly added his earnings to the common stock of the family.

Hitherto, the only sort of building which he had practised or had seen practised, was merely stone-masonry without mortar. But at length it happened that some masons came to the parish to

erect a shed for shoeing horses, near a smith's shop. William contemplated the operations of these architects with the liveliest interest, and he used to stand by them for hours while they were at work, taking note of every movement which they made. A circumstance, which at once struck him, was that they used a different description of hammer from what he had been accustomed to employ; and perceiving its superiority, he immediately procured one of the same kind for himself. With this he found he could build his walls much more neatly than he had been wont to do.

But it was not long after he had, for the first time in his life, an opportunity of seeing how houses were erected, that he undertook to build one himself. It was a workshop for a neighbor; and he performed his task in such a manner as gained him great applause. Very soon after this, he was employed to erect a mill, by which he still further increased his reputation. He was now accounted the best workman in that part of the country, and being highly esteemed for integrity and fidelity to his engagements, as well as for his skill, he had as much employment in his line of a common builder as he could undertake.

In his twenty-seventh year, however, he was induced to engage in an enterprise of a much more difficult and important character than anything which he had hitherto attempted. Through his native parish runs a river, called the Taff, which flows into the estuary of the Severn. It was proposed to throw a bridge over this river, at a particular spot, where it crossed the line of an intended road; but to this design difficulties of a somewhat formidable nature presented themselves,

owing both to the great breadth of the river, and the frequent swellings to which it was subject. Mountains, covered with wood, rose to a considerable height from both its banks; which first attracted and detained every approaching cloud, and then sent down its contents in torrents to the river. Edwards, undertook the task of constructing the proposed bridge, though it was the first work of the kind in which he ever engaged.

Accordingly, in the year 1746, he set to work; and in due time completed a very light and elegant bridge, of three arches, which, notwithstanding that it was the work of both an entirely self-taught and an equally untravelled artist, was acknowledged to be superior to anything of the kind in Wales. So far his success had been as perfect as anything which could be desired. But his undertaking was far from being yet finished. He had, both through himself and his friends, given security that the work should stand for seven years; and for two and a half years of this term all went on well. There then occurred a flood of extraordinary magnitude; not only the torrents came down from the mountains, in their accustomed channels, but they brought along with them trees of the largest size, which they had torn up by the roots; and these detained, as they floated along by the middle piers of the bridge, formed a dam there; the waters accumulating behind, at length burst from their confinement, and swept away the whole structure.

This was no light misfortune in every way to poor Edwards; but he did not suffer himself to be disheartened by it, and he immediately proceeded, as his contract bound him to do, to the erection of

another bridge. He now determined, however, to span the whole width of the river by a single arch of the unexampled magnitude of one hundred and forty feet from pier to pier. He finished the erection of this stupendous arch in 1751, and had only to add the parapets, when he was doomed once more to behold his bridge sink into the water over which he had raised it, — the extraordinary weight of the masonry having forced up the key-stones, and, of course, at once deprived the arch of what sustained its equipoise.

Heavy as was this second disappointment to the hopes of the young architect, it did not shake his courage any more than the former had done. The reconstruction of his bridge for the third time was immediately begun with unabated spirit and confidence. Still determined to adhere to his last plan of a single arch, he had now thought of an ingenious contrivance for diminishing the enormous weight which had formerly forced the key-stone out of its place. In each of the large masses of masonry, called the *haunches* of the bridge, being the parts immediately above the two extremities of the arch, he opened three cylindrical holes, which not only relieved the central part of the structure from all overpressure, but greatly improved its general appearance in point of lightness and elegance. This bridge was finished in 1755; the whole undertaking having occupied the architect about nine years in all; and it has stood ever since. This bridge, at the time of its erection, was the largest stone arch known to exist in the world.

Since that time, stone arches of extraordinary dimensions have been built, — such as the five

arches composing the splendid Pont de Neuilly, over the river Seine, near Paris, the span of each of which is one hundred and twenty-eight feet; — the island-bridge, over the Liffey, near Dublin, which is a single arch one hundred and six feet in width; — the bridge over the Tees, at Winston in Yorkshire, which is also a single arch one hundred and eight feet nine inches in width, was built by John Johnson, a common mason, at a cost of only five hundred pounds; — and the nine elliptical arches, each of one hundred and twenty feet span, forming the magnificent Waterloo bridge, over the Thames, at London. A bridge has recently been built at Chester, which is the largest single arch in the world, being two hundred feet span. At Bishop's Wearmouth, in the county of Durham, there is a cast-iron bridge over the river Wear, the chord of the arch of which is two hundred and forty feet long. The Southwark or Trafalgar bridge, over the Thames, at London, is at present the finest iron bridge in the world. It consists of three arches; the chord of the middle arch is two hundred and forty feet long. There is a *timber* bridge over the Delaware, near Trenton, N. J., which is the segment of a circle three hundred and forty-five feet in diameter. The wooden bridge over the Schuylkill, at Philadelphia, was of the extraordinary span of three hundred and forty feet; but having been destroyed by fire, a few years since, it is now replaced by a splendid one of *wire*. The bridge over the Piscataqua, near Portsmouth, N. H., is the segment of a circle six hundred feet in diameter.

The bridge built by Edwards, over the Taff, buttressed as it is at each extremity by lofty moun-

tains, while the water flows in full tide beneath it at the distance of thirty-five feet, presents an aspect very striking and magnificent. This bridge spread the fame of Edwards over all the country. He afterwards built many bridges in South Wales, having their arches formed of segments of much larger circles, and consequently much more convenient. He found his way to this improvement entirely by his own experience and sagacity; as indeed he may be said to have done in regard to all the knowledge which he possessed in his art. Even his principles of common masonry, he used himself to declare, he learned chiefly from his studies among the ruins of an old gothic castle in his native parish.

Edwards was, likewise, a farmer to the end of his days. Such, moreover, was his unwearied activity that, not satisfied with his weekday labors in these two capacities, he also officiated on the Sabbath as pastor of an Independent congregation, having been regularly ordained to that office when he was about thirty years of age, and holding it till his death. He accepted the usual salary from his congregation, considering it right that they should support their minister; but instead of putting the money into his own pocket, he returned it all, and often much more, in charity to the poor. He always preached in Welsh, though early in life he had made himself acquainted with the English language, having acquired it under the tuition of a blind old schoolmaster, in whose house he once lodged for a short time, while doing some work at the county-town of Cardiff. In this effort he showed all his characteristic assiduity.

He died in 1789, in the seventieth year of his

age. His eldest son, David, became also an eminent architect and bridge-builder, though he had no other instruction in his profession than what his father had given him. David's eldest son, also, inherited the genius of his father and grandfather.

THOMAS SCOTT.

It is not our object to write the life, or even to abridge the interesting Memoir of this venerated man. We shall simply collect such facts as bear on the design of our present undertaking, incorporating such remarks as may seem timely and important.

"My father," says Dr. Scott, "was a grazier; a man of a small and feeble body, but of uncommon energy of mind and vigor of intellect; by which he surmounted, in no common degree, the almost total want of education. His circumstances were very narrow, and for many years he struggled with urgent difficulties. But he rose above them, and, though never affluent, his credit was supported, and he lived in more comfortable circumstances to the age of seventy-six years. He had thirteen children, ten of whom lived to maturity; and my eldest brother was twenty-three years older than my youngest sister. Having been taught, principally by my mother, to read fluently and to spell accurately, I learned the first elements of Latin at Burgh, two miles off, at a school to which, for a while, I went as a day scholar. But at eight years of age I was sent to Bennington, a village about four miles north of Boston, where my father had a grazing farm, that I might attend a school in the parish kept by a clergyman. Here I continued about two years; and, in addition to writing, and the first rudiments

of arithmetic, I learned a little Latin, at my master's desire, who thought he saw in me a turn for that kind of learning. He had, as I recollect, no other Latin scholar."

About this time his eldest brother, who was a surgeon in the navy, died. "My father," continues the narrative, "felt this event, as, in every way, a most heavy affliction. He determined, however, if possible, to have a son in the medical profession; and, as I was thought of the proper age, and seemed capable of readily learning Latin, I was selected. From this time my attentain was almost entirely directed to that language; and, at different places, I got a superficial knowledge of several books generally read at schools; which gave the appearance of far greater proficiency than I had actually made. At ten years of age I was sent to Scorton, where my brother had been before me; and there I remained five years, without returning home, or seeing any relation or acquaintance. The whole expense of boarding and clothing me amounted to £14 a year; two guineas were paid for teaching, books being found; there were some extra charges for writing, arithmetic, and French, and some expenses for medical assistance; but I have often heard my father mention that I cost him £17 a year for five years. I think he must have underrated the sum, but I am fully satisfied that £100 more than covered all the charges of the five years; and this was all the cost of my education.

"The Rev. John Noble was head-master of the school at Scorton. He had been, in his day, indisputably, an able teacher of the learned languages; but at this time he was old and leth-

argic; and though still assiduous, was most grossly imposed upon by the boys, and by none more than by myself. When I arrived at Scorton, I was asked what Latin books I had read; and my answer induced the usher to overrate my proficiency, and to place me in a class much beyond my superficial attainments. This, however, stimulated me to close application, and it was not very long before I overtook my class-mates, and with ease accompanied them. Had I then been again pushed forward, I might have been excited to persevering diligence; but as I could appear with laudable credit, without much application; partly by actual proficiency, and partly by imposing on Mr. Noble, under whose care I now came; my love of play, and my scarcity of money for self-indulgent expenses, induced me to divide a great proportion of my time between diversion and helping other boys in their exercises, for a very scanty remuneration, which I lost in gaming, or squandered in gratifying my appetite. One thing is remarkable, considering what has since taken place, that, while I could translate Latin into English, or English into Latin, perhaps more readily and correctly than any other boy in the school, I never could compose themes. I absolutely seemed to have no *ideas*, when set to work of this kind, either then or for some years afterwards; and was even greatly at a loss to write a common letter. As for verses, I never wrote any except *nonsense* verses, of one kind or other; which has perhaps been the case also of many more prolific versifiers. God had not made me a poet, and I am very thankful that I never attempted to make myself one."

Soon after leaving school, he was bound apprentice to a surgeon and apothecary at Alford, about eight miles from Braytoft, his father's residence. His master, it appears, was entirely *unprincipled*, and young Scott followed closely in his steps. At the end of two months, he was sent home in deep disgrace for gross misconduct. Though this was a severe mortification to his father and to the whole family, yet the course pursued towards him seems to have been unjustifiably severe, and even cruel.

"Immediately on my return home," continues Mr. Scott, "I was set to do, as well as I could, the most laborious and dirty parts of the work belonging to a grazier. On this I entered at the beginning of winter; and as much of my father's farm consisted of low land, which was often flooded, I was introduced to scenes of hardship, and exposed to many dangers from wet and cold, for which my previous habits had not prepared me. In consequence I was frequently ill, and, at length, suffered such repeated and obstinate maladies that my life was more than once despaired of. Yet a kind of indignant, proud self-revenge, kept me from complaining of hardship; though of reproach and even of reproof, I was impatient to the greatest degree of irascibility. After a few unsuccessful attempts, my father gave up all thoughts of placing me out in any other way; and for above nine years I was nearly as entire a drudge as any servant or laborer in his employ; and almost as little known beyond the circle of immediate neighbors. My occupation was generally about the cattle, and particularly in the spring season. In this service I learned

habits of hardiness in encountering all sorts of weather, (for the worse the weather, the more needful it was that I should be with the sheep,) which have since proved useful to me; and though I was not kept from learning many vices, I was out of the way of acquiring habits of ease and indulgence, as I should otherwise, probably, have done. My situation, however, led me to associate with persons of the lowest station of life, and wholly destitute of religious principle — in all ranks the grand corrective, and in this rank almost the sole restraint upon character and manners. These persons tried to please me with flatteries, and to inflame still more the indignancy of spirit with which I rebelled against the supposed degradation that I suffered."

Still he entertained thoughts of the University and of the clerical profession. He fondly cherished the hope of one day rising from the degradation to which he was condemned. Hence, in some of the winter evenings he used to read whatever books he could procure. But strange to say, his father, though himself a studious and inquisitive man, was wholly opposed to the gratification of the literary propensity of his son, judging it to be wholly inconsistent with diligence in his business. He used to say frequently that he foresaw that his son would come to be a charge to the parish.

This conduct of his father greatly strengthened him to spend his leisure time from home, and often in low and abandoned company. Another impediment was the almost entire want of books. A few torn Latin books, a small imperfect Dictionary, and an Eton Greek Grammar, composed his whole stock in the languages.

Mr. Scott had only one surviving brother, and he was well situated on a farm. His father was far advanced in life, and not of a strong constitution. It was generally supposed that Thomas would succeed to the estate. "But at length," says the narrative, "it was discovered that the lease of this farm was left by will to my brother; and that I was merely to be under-tenant to him for some marsh-grazing lands, which were without a house, and on which I knew a family could not be decently maintained. On this discovery, I determined to make some effort to extricate myself; and I only waited for an opportunity to declare my determination. Without delay my Greek Grammar was studied through and through; and I made what use I could of my Latin books; my father, in the mean time, expressing his astonishment at my conduct.

"At length, in April, 1772, in almost the worst manner possible, after a long wet day of incessant fatigue, I deemed myself, and perhaps with justice, to be causelessly and severely blamed, and I gave full vent to my indignant passions; and throwing aside my shepherd's frock, declared my purpose no more to resume it. That night I lodged at my brother's, at a little distance; but, in the morning, I considered that a large flock of sheep had no one to look after them, who was competent to the task; I therefore returned and did what was needful; and then set off for Boston, where a clergyman resided, with whom I had contracted some acquaintance, by conversing with him on common matters, when he came to do duty in my brother's village, and took refreshments at his house.

"To this clergyman I opened my mind with hesitancy and trepidation; and nothing could exceed his astonishment when he heard my purpose of attempting to obtain orders. He knew me only as a shepherd, somewhat more conversable, perhaps, than others in that station, and immediately asked, 'Do you know anything of Latin and Greek?' I told him I had received an education, but that for almost ten years, I had not seen a Greek book, except the Grammar. He instantly took down a Greek Testament, and put it into my hands; and without difficulty I read several verses, giving both the Latin and English rendering of them, according to the custom of our school. On this, having strongly expressed his surprise, he said, 'Our visitation will be next week; the archdeacon, Dr. Gordon, will be here; and if you will be in the town I will mention you to him, and induce him, if I can, to send for you.' This being settled, I returned immediately to my father for the intervening days; knowing how much, at that season, he wanted my help, for services which he could no longer perform himself, and was not accustomed to entrust to servants."

In a letter to his sisters, which he wrote about this time, he says, "My aunt Wayet endeavored to rally me out of my scheme, but I must own I thought her arguments weak. She urged the ridicule which *poor parsons* meet with; but surely, those who ridicule any one on account of his poverty, if he behaves in a manner worthy of his situation, are themselves persons whose opinion I despise. She said she would not be of any profession, unless at the head of it; but this can be no rule for general practice, as some must

be subordinate. She mentioned my not being brought up in a regular manner; but it is the end, not the means, which is of the greatest consequence; and if a man be qualified, it matters not where he procured his qualifications. It sometimes humbles my vanity to hear them all account of me as one of the lowest order of the profession, not only in point of fortune, but also in other particulars. If I know myself, I am not deficient in abilities, though I am in the art of rendering them conspicuous; my vanity prompts me to say, that I am not without hopes of making friends in this way of life, as I shall be more conversant with men of letters, who are the companions I most delight in, and for whose company I shall spare no pains to qualify myself. But let my condition in life be what it will, I will endeavor to suit myself to it. Pray heaven preserve me independent on any other for a livelihood, and I ask no more. The happiest hours I ever spent, have been in your company, and the greatest reluctance I feel at this change of my situation is, the being separated from a set of sisters, for whom I have the most sincere regard.

"At the appointed time," continues the narrative, "I returned to Boston, where my family was well known, and readily found access to the archdeacon, who was also examining chaplain to the Bishop of Lincoln, Dr. Green. Before him I repeated, in another part of the Greek Testament, what I had done at the clergyman's house; and was asked many questions, which I answered without the least disguise. The archdeacon concluded the interview, by assuring me that he would state my case to the bishop, and saying

that he thought it probable his lordship would ordain me.

"Thus encouraged, I expended all the little money which I could raise on books; went to live at Boston; and applied diligently to study — especially to improve my knowledge of the Greek Testament, (the Gospels in particular,) and to recover, or rather to acquire the ability of composing in Latin. I had now for some years been ready in expressing my thoughts, and had even been, in some instances, a writer in newspapers and magazines. I daily, therefore, wrote in Latin, on texts of Scripture, a sort of short sermons, which my friend, the clergyman, revised; and, in return, I afforded him very seasonable and welcome assistance in a grammar school which he taught."

His first attempt to gain ordination was, however, unsuccessful. His papers had not reached the ordaining bishop in season, and other circumstances were unsatisfactory. This repulse induced in the bosom of the applicant, a kind of despair. The bishop had said that he should probably admit him at the next ordination, provided he would procure his father's consent to the measure, and a letter from any beneficed clergyman in the neighborhood. But he was not personally known to half a dozen clergymen of the description required; and his attempt was utterly reprobated by every one of them as in a high degree presumptuous. He was now in the twenty-sixth year of his age, wholly without the prospect of a decent subsistence, and to complete the appalling prospect, his father was most decidedly set against the design.

But an energy, such as Thomas Scott had, could not be repressed. The fire, which was burning in his bosom, no adverse circumstances could extinguish. He had made up his mind to accomplish the work, and it would seem that no human power could stay him.

He travelled to his home from London, by a circuitous route, and a great part of the way on foot, and the rest in various vehicles. At length he reached Braytoft, after walking twenty miles in the forenoon; having dined, and divested himself of his clerical dress, he resumed his shepherd's clothes, and in the afternoon, sheared eleven large sheep!

"This, however," he observes, "was my last labor of the kind. My attempt to obtain orders had been widely made known in the neighborhood, even much beyond the sphere of my personal acquaintance; and it had excited much attention and astonishment, with no small degree of ridicule. This raised the spirit of my relations; and the sentiment expressed by my brother, was that of the other branches of the family. 'I wish,' said he, 'my brother had not made the attempt; but I cannot bear to have it said, that one of our name undertook what he was unable to accomplish.'

"In consequence of this sensation, my brother and all my sisters met by appointment at my father's house; and, with my mother, urged it in the most earnest manner, as his indispensable duty, either to consent to my ordination, or to fix me on a farm on my own account. I apprehend it was clearly foreseen what his concession would be, if he could be induced to concede at all; and

accordingly, after much debate, he gave his consent in writing to my entering into orders.

"As the difficulty, which I regarded as insuperable, was in a most unexpected manner, surmounted; and my hopes reviving, I was prepared to struggle over other obstacles, if possible. Despairing of obtaining a letter to the bishop from any of the beneficed clergymen, to whom, as living within a few miles, I was in some degree known, I applied without delay, to the vicar of Boston, Dr. Calthorp, who was well acquainted with my mother and her family, though he had seldom, if ever, seen me, till I met the archdeacon at his house. He behaved in the most candid manner; yet as a truly conscientious man, (which I believe he really was,) he said justly that he could not sign my testimonial, or state anything concerning me from his own knowledge, except for the short time which had passed since I first came to his house; but that he could give a favorable account as to that time; and if I could procure attestations from any respectable persons, though not clergymen, he would transmit them with his own letter to the bishop. Thus encouraged, I went again to reside at Boston, where I applied diligently to my studies; but I was greatly frowned on by many of my relations; and I frequently heard the laugh of the boys, as I walked about the street in a brown coat, and with lank hair, pointing me out as the 'parson!'—if this were a species of persecution, it was certainly not for *Christ's sake*, or *for righteousness' sake*, for I was estranged from both at this time."

It is proper here to remark, that however valuable the traits of character were, which were

exhibited by Mr. Scott, it is evident, and it is what he many times, and sorrowfully acknowledged in subsequent life, that he had not *that* character which is essential in the Christian ministry. He approached this sacred work as he would have approached either of the other professions. No spirit can be more foreign from the ministry of reconciliation than ambition, or disappointed pride, or that zeal which is enkindled by a sense of degradation, and a desire to rise superior to our fellow creatures, in order to show them the strength of our character, and the energy of our purpose. The Great Shepherd was meek and lowly, and those only are accepted by him, who are willing to tread in his steps.

"At the ensuing ordination, I was admitted a candidate," continues Mr. Scott, "without objection, and was examined at Buckden, by Dr. Gordon. After examination on other matters, he asked me numerous questions concerning the nature of miracles; how real miracles might be distinguished from counterfeit ones; and how they proved the truth of the doctrine in support of which they were wrought. This was, indeed, almost the only theological topic which I had studied with any tolerable attention. He, however, perceived that I began to be alarmed, and kindly said, 'You need not be uneasy; I only wished to try of what you were capable; and I perceive that Christianity has got an able advocate in you.' I could not find myself at liberty to suppress this remarkable attestation, which is, I believe, expressed exactly in the words he used; but had he known either my creed, and the state of my heart at that time, or whither my subse-

quent inquiries would ultimately lead me, I am persuaded he would not have spoken as he did."

Mr. Scott, immediately after his ordination, entered on his duties as a curate for Stoke, and for Weston Underwood, in Buckinghamshire. "No sooner," says Mr. Scott, "was I fixed in a curacy, than with close application I sat down to the study of the learned languages, and such other subjects as I considered most needful in order to lay the foundation of my future advancement. I spared no pains, I shunned, as much as I well could, all acquaintance and diversions, and retrenched from my usual hours of sleep, that I might keep more closely to this business."

In a period of nine months he read through the entire works of Josephus in the original Greek. In a letter to one of his sisters, dated September 18, 1773, he remarks, "I have, for some time, pursued my studies with assiduity, but I have only lately got to pursue them with method. I am now about three hours in the day engaged in Hebrew. The books I use are a Hebrew Bible, Grammars, and Lexicons, the noted Septuagint, or Greek translation, and a Commentary. I began at the first chapter of Genesis, and I intend to go through the whole Bible in that manner. You will see the manifold advantages of thus reading the Scriptures. The original text, a Greek translation two thousand years old and above, our translation, and comments, read carefully, and compared together word by word, cannot fail to give a deep insight into the sense of the Scriptures; and at the same time, two languages are unitedly improving. The same I am doing in the Greek and profane history. I am reading

old Herodotus, in the original, in Latin, and in English. For each book read, whether ancient or modern history, I have my maps laid before me, and trace each incident by the map; and in some degree also fix the chronology. So that the languages seem my principal study; history, geography, and chronology, go hand in hand. Neither is logic neglected. I find my taste for study grow every day. I only fear I shall be like the miser, too covetous. In fact I really grudge every hour that I employ otherwise. Others go out by choice, and stay at home by constraint; but I never stay at home by constraint, and go out because it is necessary. In every other expense I am grown a miser; I take every method to save, but here I am prodigal. No cost do I in the least grudge, to procure advantageous methods of pursuing my studies. Of the Hebrew, some twenty weeks ago I knew not a letter; and I have now read through one hundred and nineteen of the Psalms, and twenty-three chapters of Genesis; and commonly now read two chapters in the time above mentioned, tracing every word to its original, unfolding every verbal difficulty."

At the same time the more appropriate duties of his calling were not neglected. He generally wrote two sermons in a week, and in one instance, in the course of three weeks, wrote seven sermons, each thirty-five minutes long.

For a few of the following years, Mr. Scott was employed on subjects of an exclusively religious nature, and deeply affecting his personal feelings and character. At length he became established in the hopes of the gospel of Christ,

and thenceforward his path was illuminated with the light of eternal life. But there was no change in the vigor of his mind, and the unconquerable perseverance of his character. His reading became as various as he had the opportunity of making it. No book that furnished knowledge, which might be turned to account, was uninteresting to him. As an example, he read repeatedly Mr. Henry Thornton's work on Paper Credit, having in some measure been prepared for the subject, by his former study of Locke's Treatises on Money, &c. At a much later period also he felt himself deeply interested in reading the Greek Tragedians, and other classic authors, with his pupils. He earnestly desired to see the branches of literature rendered subservient to religion; and thought that, while too much perhaps, was published directly upon theological subjects, there was a lamentable deficiency of literary works conducted upon sound Christian principles.

The following extract exhibits an interesting trait in his character. "After I had written my sermons for the Sunday, I, for a long time, constantly read them to my wife before they were preached. At her instance, I altered many things, especially in exchanging words, unintelligible to laborers and lace-makers, for simpler language."

Between the year 1807, and 1814, Dr. Scott was the tutor of persons preparing to go out as missionaries, under the Church Missionary Society. The individuals who came under his instruction, were in general German Lutheran clergymen. All of them went forth as mission-

aries in the heathen world; and most of them are now usefully employed in that character. The progress which they made in their studies was highly creditable; in some instances, remarkable. "With all my other engagements," says Dr. Scott, "I am actually, in addition to what I before taught the missionaries, reading Susoo and Arabic with them. The former we have mastered without difficulty, so far as the printed books go; and hope soon to begin translating some chapters into the language. But as to the latter, we make little progress; yet so far, that I have no doubt of being able to read the Koran with them, should they continue here. It is in itself a most difficult language, but my knowledge of the Hebrew gives me an advantage."

This labor was accomplished when Dr. Scott was more than sixty years old. Perhaps there is hardly on record an instance of more vigorous application to the study of very difficult languages, — the student threescore years old, and suffering severely from chronic complaints. It is one of the proofs (would that they were far more numerous,) of a successful effort to withstand the effects of age. The Hebrew, likewise, which was his auxiliary on this occasion, had been entirely resumed, and almost learned since his fifty-third year.

The history of the life of Dr. Scott teaches us a number of important lessons. It shows us that a resolute heart can vanquish many difficulties. Dr. Scott had a great variety of depressing and adverse circumstances with which to meet. He had strong and ungovernable passions. He was compelled to spend some of the best years of his

life in an employment most uncongenial to mental improvement. He had very little of the ease and leisure, delightful associations and poetry of a shepherd's life. He had the storms, the incessant anxiety, and the exhausting labors of the occupation. He fed his flocks, not among the green hills and valleys, but in low marshy regions, altogether unfriendly to intellectual effort. He had also the disheartening remembrance of an early failure constantly before his mind. Of this failure his own misconduct, too, was a principal cause. His father, with many valuable qualities, was stern and inexorable. His son had commenced an honorable profession, and had been disgraced, and he determined to keep him thenceforward in a condition where neither his good nor bad conduct would be known, where at least the pride of the family would not again be wounded.

Dr. Scott had also a rough and unpolished exterior. He had native vigor of mind, but little that was prepossessing in his first appearance, even after a long and familiar intercourse with enlightened society. But he urged his way over all these difficulties; the number of obstacles only called forth a more determined energy. He set his face forward, and all the appalling forms of discouragement could not divert him. Victory over one enemy gave him additional power to attack another. A servile employment, degraded companions, the pertinacious opposition of a father, the goading recollection of the past, a forbidding personal exterior, severe bodily infirmity, advancing age, the pressure of domestic duties, a miserable stipend for support, — all, all could not dampen that ardor which engrossed and fired his soul.

Another valuable lesson which we are taught by Dr. Scott's history is, that the highest possible motives of action, a regard to the will of our Maker, and the well-being of mankind, are, at least, as operative and influential as any selfish and personal considerations. In the commencement of his intellectual career, Dr. Scott was laboring for himself. Personal aggrandizement was the prize which he set before him, and which fixed his eye, quickened his step, filled his mind. But ere long the current of his desires was changed. The emotions and purposes which had gone abroad only to bring back to himself a fresh harvest of applause and reputation, went outward to the ends of the earth, and upward to the throne of God. Personal ambition gave place to the most expansive benevolence. Instead of living for himself and for his own times, he lived for other and future ages. But this change did not repress the ardor of his soul. It did not freeze up the living current there. He was as avaricious of time, when that time was devoted to the interests of his Redeemer, as when it was employed in gathering tributes of human admiration. He grappled as strongly and as perseveringly with the difficulties of a foreign language, when the hope of heaven and the honor of his Saviour were before his eye, as when splendid church preferment or literary reputation were the idols to which he bowed in worship. This fact is one of great interest. It shows that the highest development of the intellectual powers is in perfect accordance with the most disinterested and godlike benevolence; that human duty and human interest are perfectly coincident.

Dr. Scott furnishes a most remarkable instance of severe mental application till the very close of life. Amidst the pressure of disease and of pain, which were almost unintermitted, his mind maintained a very vigorous and healthy action. At the age of *seventy-two* years, he remarks, "I never studied each day more hours than I now do. Never was a manufactory more full of constant employment than our house; five proof-sheets of my Commentary a week to correct, and as many sheets of copy (quarto) to prepare." For about forty-six years he studied eight, ten, and sometimes fourteen hours a day. After thirty-three years' labor bestowed on his Commentary on the Scriptures, he was as assiduous in correcting and improving it as ever. The marginal references cost him seven years of hard labor. When seventy years old, he engaged in a controversy with a Jew on the fundamental questions in dispute between the Jews and Christians, and produced an original and highly interesting work in defence of the Christian faith. At the age of sixty, a period at which it would generally be thought impracticable to acquire a foreign tongue, Dr. Scott studied Arabic and Susoo, — the latter an African dialect, and both exceedingly difficult languages to be mastered. We rejoice in this instance of a man bearing fruit in old age, triumphing over the pains and weakness of mortality, and retaining full mental power to the last moment of life. It shows what is possible to be done in numerous other cases. Many individuals intend to be useless, intend to gather themselves into a corner in inglorious ease, if God sees fit to spare their life beyond the age of threescore years. Dr. Scott

reasoned and acted differently. His sun was almost as bright at setting as in the morning or at the meridian. It sent forth the same powerful heat and the same mild and steady light.

It is also very gratifying to see that the unconquerable energy and noble aim of this self-taught man were not in vain. All this energy was expended on praiseworthy objects. He labored not for the sake of showing his decision of character, but of doing good with it. If he wasted little intellect by idleness, he wasted as little by misapplication. He brought the whole of his judgment, discrimination, strong sense, fearless piety and unsleeping mental power to the promotion of human happiness. He was certainly one of the most useful men that ever lived.

The sale of his works, of plain didactic theology, during his life time, amounted to two hundred thousand pounds sterling. Probably an equal sum has been expended for these same works since his death. Of his Commentary on the Scriptures, not less than thirty-five thousand copies have been sold in the United States alone, at a sum of at least seven hundred thousand dollars. Two stereotype editions of it have been published. The work is now, at the distance of thirty years from its publication, as popular and acceptable to the religious public as ever. The annual sale is now, in this country, not less than fifteen hundred copies. What an amount of good has been accomplished by a single effort of this entirely self-taught man. At least one hundred thousand families gathering their views of the meaning of the Christian revelation from the comments of a single mind. This already amazing amount of

good is but a tithe of what will yet be seen. Wherever, on all the continents of this earth, the English language shall be spoken and the English Bible shall be found, there the name of THOMAS SCOTT will be hailed as one of the most important benefactors of mankind.

LOTT CARY.

Oh, Afric! what has been thy crime!
That thus, like Eden's fratricide,
A mark is set upon thy clime,
And every brother shuns thy side.
Yet are thy wrongs, thou long distressed,
Thy burden, by the world unweighed,
Safe in that UNFORGETFUL BREAST
Where all the wrongs of earth are laid.
The sun upon thy forehead frowned,
But man more cruel far than he,
Dark fetters on thy spirit bound.
Look to the mansions of the free!
Look to that realm where chains unbind,
Where powerless falls the threat'ning rod,
And where the patient sufferers find
A friend, a father, in their God!

Mrs. Sigourney.

Some events which have recently taken place in this country, have given a fresh interest to the cause of African colonization. In the county of Southampton, Virginia, about sixty white persons fell victims in a negro insurrection, which occurred during the summer of 1831. A very serious alarm has been communicated in consequence, to various portions of the southern country, and many apprehensions have been entertained of the repetition of similar tragedies. A practical, though fearful proof has thus been given to the people of the United States, of the evil of the slave system. The danger has been shown to be real. It

is no fictitious terror which has led the inhabitants of Virginia to consider more maturely and earnestly the plans of the American Colonization Society. Something must be done. An outlet for a part of the colored population must be provided at all hazards. By the recent awful events, the providence of God is speaking to us most distinctly, to weigh well this subject, and to act promptly in regard to it.

It seems to us that the American Colonization Society has now come to a most important period of its history, when a great movement can and ought to be made onward, when, to fulfil the palpable indications of Providence, it should lay aside all hindrances, and proceed to its great work with all the promptitude and wisdom possible. Such a course would furnish the best of all arguments wherewith to meet the numerous opposers of the Society. Plant on the African coast high and broad monuments of the feasibility of colonization; erect along all the shore living confutations of the calumnies and of the grave objections which have been urged against this infant enterprise; show practically that the well-being of the free-colored population of this country is one great object of the scheme, that when the African steps upon the Liberian shore he is elevated in the scale of being and rises into the dignity of true freedom. Write the eulogy of the Society in Africa, on her shores, in her spreading commerce, up her long rivers. When the voice of ignorance or ill-will assails this noble enterprise, let a thousand happy voices come over the Atlantic and deny the charge.

We do not, ourselves, place much confidence in the opposition or the indifference which is mani-

fested towards the Colonization Society. It is not a selfish, cold-hearted policy, designed to remove the colored people against their inclinations and interest. It is an enterprise conceived in the most exalted benevolence and in the most comprehensive regards to the interests of mankind. It is not a plan of the North or the South. It looks to the well-being of *two whole continents.* In lawful and proper ways, it would purify this land from a fearful and blighting curse. It would help to pour the light of eternal life on the whole of forlorn and lost Africa.

Looking at the principal friends of the American Colonization Society, we see no reason to impugn their motives. Were not Harper, and Caldwell, and Fitzhugh, men of sagacious minds, and of most expansive charity? Did not pity, real pity for the woes of the African race, fill the bosom of Mills, and Ashmun, and Sessions, and Randall and Anderson? To call in question the benevolence of such men, does nothing more than to bring into doubt that of the objector. Examine the public documents, try the public measures of the Society with the most rigid scrutiny, and they will not be found wanting. Equally without foundation, is the objection urged against the unhealthiness of the African climate. Not one half the mortality has been experienced at Liberia which ravaged and almost desolated the early colonies of Virginia, New Plymouth and Massachusetts. Let the forests be levelled, and pure air circulate, let all the marshes and stagnant waters be drained, let all the colonists avoid unnecessary exposure and fatigue, and let them utterly abandon all use of ardent spirits and other stimulants, and we

should hear little more of the mortality of Liberia. Temperate men can live, and do live, at Havana, Batavia, at Calcutta, and at any other alleged unhealthy spot on the globe. Those places are the graves of Europeans, because a miserable police and intemperance have made them to be so. To these causes we unhesitatingly ascribe the greater part of the mortality which has prevailed at Liberia. Remove the cause and the effect will cease.

The plan of colonizing the colored people is not a chimerical one. There are abundant means for this purpose. An appropriation of *one million* of dollars annually to this purpose, would transport such a number as would speedily accomplish the great work. This country has several hundred millions of acres of land at her disposal. How perfectly within the compass of her ability to assist in the deliverance and return of the African race! The right, constitutionally, to render this assistance will hardly be denied, after the *Indian* precedent which has been given, after the liberal and lavish offers which have been made, to induce the aboriginal inhabitants of this country to remove to an El Dorado in the wilderness.

The great, the fundamental difficulty, want of intellectual and moral preparation in the colored people, is not an insuperable one. There has been, indeed, a long process of degradation. Servile habits have been worn into the soul. The intellect of the Africans has been muffled and *bandaged* by law. Still they have minds. The spark of immortal life has been kindled in them by their beneficent Creator. They have the im-

material, responsible, expansive, ever-aspiring principle. Remove the pressure of adverse circumstances, lay before them the proper motives, and they will spring into the path which leads to honor, and knowledge, and glory. The Creator has not doomed one portion of his intellectual offspring to everlasting seclusion from improvement. He has not buried them in one vast grave, where the light of truth and joy and immortal hope will never reach them. Africa has had an Hanno, an Hannibal, a Juba, a Cyprian, an Augustine. Did not Africaner, who has been termed the South African Bonaparte, exhibit noble traits of character? Has not slavery itself furnished specimens of genius which would have done honor to the native hills and pure air of freedom? Who has not heard of the generous and affectionate strains of the self-taught Phillis Wheatley; of the noble spirit of Citizen Granville of Hayti, and of the magnanimity of Prince Abdul Rahahhman?

In the year 1739, and for several years afterwards, Benjamin Banneker, a colored man of Maryland, furnished the public with an almanac, which was extensively circulated through the Southern States. He was a self-taught astronomer, and his calculations were so thorough and exact, as to excite the approbation and patronage of such men as Pitt, Fox, Wilberforce, and other eminent men, by whom the work was produced in the British House of Commons, as an argument in favor of the mental cultivation of colored people, and of their liberation from their wretched thraldom.

Another interesting instance of self-taught Afri-

can genius, was LOTT CARY. He was born a slave, in Charles City County, about thirty miles below Richmond, Virginia, on the estate of Mr. William A. Christian. His father was a pious and much respected member of the Baptist church, and his mother, though she made no public profession of religion, died, giving evidence that she relied for salvation upon the merits of the Son of God. He was their only child, and though he had no early instruction from books, the admonitions and prayers of illiterate parents may have laid the foundations of his future usefulness. In 1804, he was sent to Richmond, and hired out by the year, as a common laborer, at the Shockoe warehouse. A strong desire to be able to read, was excited in his mind, by a sermon which he heard, and which related to our Lord's interview with Nicodemus; and having obtained a Testament, he commenced learning his letters, by trying to read the chapter in which this interview is recorded. He was occasionally instructed by young gentlemen at the warehouse, though he never attended a regular school. In a little time he was able to read, and also to write so as to make *dray* tickets, and superintend the shipping of tobacco. Shortly after the death of his first wife, in 1813, he ransomed himself and two children for $850, a sum which he had obtained by his singular ability and fidelity in managing the concerns of the tobacco warehouse. Of the real value of his services there, it has been remarked, "no one but a dealer in tobacco can form an idea." Notwithstanding the hundreds of hogsheads, which were committed to his charge, he could produce any one the moment it was called for; and the shipments were made

with a promptness and correctness, such as no person, white or colored, has equalled in the same situation. The last year in which he remained in the warehouse his salary was $800. For his ability in his work he was highly esteemed and frequently rewarded by the merchant with a five dollar bank note. He was also allowed to sell, for his own benefit, many small parcels of damaged tobacco. It was by saving the little sums obtained in this way, with the aid of subscriptions by the merchants to whose interests he had been attentive, that he was enabled to purchase the freedom of his family. When the colonists were fitted out for Africa, he was enabled to bear a considerable part of his own expenses. He also purchased a house and some land in Richmond. It is said that while employed at the warehouse, he often devoted his leisure time to reading, and that a gentleman, on one occasion, taking up a book which he had left for a few moments, found it to be "Smith's Wealth of Nations." He remained, for some years after his removal to Richmond, entirely regardless of religion, and much addicted to profane and vicious habits. But God was pleased to convince him of the guilt and misery of a sinful state, and in 1807, he publicly professed his faith in the Saviour, and became a member of the Baptist church. Soon after this period, he commenced the practice of conducting the services at religious meetings. Though he had scarcely any knowledge of books, and but little acquaintance with mankind, he would frequently exhibit a boldness of thought, and a strength of intellect which no acquirement could have ever given him. A distinguished minister

of the Presbyterian church made the following remark. "A sermon, which I heard from Mr. Cary, shortly before he sailed for Africa, was the best extemporaneous sermon which I ever heard. It contained very original and impressive thoughts, some of which are distinct in my memory, and never can be forgotten." The following sentences form the closing part of an extemporaneous address which he uttered on the eve of his departure. "I am about to leave you; and expect to see your faces no more. I long to preach to the poor Africans the way of life and salvation. I do not know what may befall me, or whether I may find a grave in the ocean, or among the savage men, or more savage wild beasts on the coast of Africa; nor am I anxious what may become of me. I feel it my duty to go; and I very much fear that many of those who preach the gospel in this country, will blush when the Saviour calls them to give an account of their labors in his cause, and tells them, 'I commanded you to go into all the world, and preach the gospel to every creature," and with the most forcible emphasis he exclaimed, "the Saviour may ask, 'Where have you been? What have you been doing? Have you endeavored to the utmost of your ability to fulfil the commands I gave you; or have you sought your own gratification and your own ease, regardless of my commands?'"

As early as the year 1815, he began to feel special interest in the cause of the African missions, and contributed, probably, more than any other person, in giving origin and character to the African Missionary Society, established during that year in Richmond, and which has, for thirteen

years, collected for the cause of missions in Africa, from one hundred to one hundred and fifty dollars. His benevolence was practical, and whenever and wherever good objects were to be effected, he was ready to lend his aid.

Mr. Cary was among the earliest emigrants to Africa. Here he saw before him a wide and interesting field, demanding various and powerful talents, and the most devoted piety. His intellectual ability, firmness of purpose, unbending integrity, correct judgment, and disinterested benevolence, soon placed him in a conspicuous station, and gave him wide and commanding influence. Though naturally diffident and retiring, his worth was too evident, to allow of his remaining in obscurity. It is well known, that great difficulties were encountered in founding a settlement at Cape Montserado. So appalling were the circumstances of the first settlers, that soon after they had taken possession, it was proposed that they should remove to Sierra Leone. The resolution of Mr. Cary to remain, was not to be shaken, and his decision had no small effect towards inducing others to imitate his example. In the event, they suffered severely. More than eight hundred natives attacked them in November, 1822, but were repulsed; and a few weeks after, a body of fifteen hundred attacked them again at day-break; several of the colonists were killed and wounded; but with only thirty-seven effective men and boys, and the aid of their six pounder, they again achieved a victory over the natives. In these scenes Mr. Cary necessarily bore a conspicuous part. In one of his letters he remarks, that like the Jews in rebuilding their city, they had to toil

with their arms beside them, and rest upon their arms every night; but he declared after this, in the most emphatic terms, that "there never had been an hour or a minute, no, not even when the balls were flying around his head, when he could wish himself back to America again."

The peculiar exposure of the early emigrants, the scantiness of their supplies, and the want of adequate medical attentions, subjected them to severe and complicated sufferings. To relieve, if possible, these sufferings, Mr. Cary obtained all the information in his power, concerning the diseases of the climate, and the proper remedies. He made liberal sacrifices of his property, in behalf of the poor and distressed; and devoted his time almost exclusively to the relief of the destitute, the sick, and the afflicted. His services as physician to the colony were invaluable, and were, for a long time, rendered without hope of reward. But amid his multiplied cares and efforts for the colony, he never forgot or neglected to promote the objects of the African Missionary Society, to which he had long cherished and evinced the strongest attachment. Most earnestly did he seek access to the native tribes, and endeavor to instruct them in the doctrines and duties of that religion, which had proved so powerful and precious in his own case. Many of his last and most anxious thoughts were directed to the establishment of native schools in the interior. One such school, distant seventy miles from Monrovia, and of great promise, was established through his agency, about a year before his death, and patronized and superintended by him till that mournful event.

In September, 1826, Mr. Cary was elected

Vice Agent of the Colony, and discharged the duties of that important office till his death. In his good sense, moral worth, decision, and public spirit, Mr. Ashmun, the Agent, had the most entire confidence. Hence, when compelled to leave the colony, he committed the administration of affairs into the hands of the Vice Agent, in the full belief that no interest would be betrayed, and no duty neglected. The conduct of Mr. Cary, while for six months he stood at the head of the colony, added to his previously high reputation.

On the evening of the 8th of November, 1828, while Mr. Cary, and several others, were engaged in making cartridges in the old agency house at Monrovia, in preparation to defend the rights of the colony against a slave-trader, a candle appears to have been accidentally overturned, which caught some loose powder, and almost instantaneously reached the entire ammunition, producing an explosion, which resulted in the death of eight persons. Mr. Cary survived for two days.

"The features and complexion of Mr. Cary's character were altogether African. He was diffident, and showed no disposition to push himself into notice. His words were simple, few, direct, and appropriate. His conversation indicated rapidity and clearness of thought, and an ability to comprehend the great principles of religion and government.

"To found a Christian colony, which might prove a blessed asylum to his degraded brethren in America, and enlighten and regenerate Africa, was an object with which no temporal good, not even life could be compared. The strongest sympathies of his nature were excited in behalf of

his unfortunate people, and the divine promise cheered and encouraged him in his labors for their improvement and salvation. His record is on high. His memorial shall never perish. It shall stand in clearer light, when every chain is broken, and Christianity shall have assumed her sway over the millions of Africa."

JOHN OPIE.

John Opie was born in the parish of St. Agnes, about seven miles from Truro, in the county of Cornwall, England, in 1761. His father and grandfather were carpenters. John appears to have been regarded among his rustic companions as a kind of parochial wonder, from his early years. At the age of twelve, he had mastered Euclid, and was considered so skilful in arithmetic and penmanship, that he commenced an evening school for the instruction of the peasants of the parish of St. Agnes. His father, a plain mechanic, seems to have misunderstood all these indications of mental superiority, and wished him to leave the pen for the plane and saw; and it would appear that his paternal desires were for some time obeyed, for John at least accompanied his father to his work; but this was when he was very young, and it seems probable that he disliked the business, since his father had to chastise him for making ludicrous drawings, with red chalk, on the *deals* which were planed for use.

His love of art came upon him early. When he was ten years old, he saw Mark Oates, an elder companion, and afterwards captain of marines, draw a butterfly; he looked anxiously on, and exclaimed, "I think I can draw a butterfly; as well as Mark Oates;" he took a pencil, tried, succeeded, and ran breathless home to tell his

mother what he had done. Soon afterward he saw a picture of a farmyard in a house in Truro, where his father was at work; he looked and looked — went away — returned again and looked — and seemed unwilling to be out of sight of this prodigy. For this forwardness, his father gave him a sharp chastisement — but the lady of the house interposed, and gave the boy another sight of the picture. On returning home, he procured cloth and colors, and made a copy of the painting, from memory alone. He likewise attempted original delineation from life; and, by degrees, hung the humble dwelling round with likenesses of his relatives and companions, much to the pleasure of his uncle, a man with sense and knowledge above his condition, but greatly to the vexation of his father, who could not comprehend the merit of such an idle trade.

He was employed for some time, in the family of Dr. Wolcot, the satirist, as a menial servant. How long he remained in that employment is not known. He commenced portrait painting, by profession, very early in life. He used to wander from town to town in quest of employment. "One of these expeditions," says his biographer, "was to Padstow, whither he set forward, dressed as usual in a boy's plain short jacket, and carrying with him all proper apparatus for portrait painting. Here, among others, he painted the whole household of the ancient and respectable family of Prideaux, even to the dogs and cats of the family. He remained so long absent from home, that some uneasiness began to arise on his account, but it was dissipated by his returning, dressed in a handsome coat, with very long skirts,

laced ruffles, and silk stockings. On seeing his mother he ran to her, and taking out of his pocket twenty guineas which he had earned by his pencil, he desired her to keep them, adding that in future he should maintain himself."

For his mother he always entertained the deepest affection, and neither age nor the pressure of worldly business diminished his enthusiasm in the least. He loved to speak of the mildness of her nature and the tenderness of her heart, of her love of truth and her maternal circumspection. He delighted to recall her epithets of fondness, and relate how she watched over him when a boy, and warmed his gloves and great coat in the winter mornings, on his departure for school. This good woman lived to the age of ninety-two, enjoyed the fame of her son, and was gladdened with his bounty.

Of those early efforts, good judges have spoken with much approbation; they were deficient in grace, but true to nature, and remarkable for their fidelity of resemblance. He painted with small pencils, and finished more highly than when his hand had attained more mastery. His usual price, when he was sixteen years of age, was seven shillings and sixpence for a portrait. But of all the works, which he painted in those probationary days, that which won the admiration of the good people of Truro most, was a parrot walking down his perch; all the living parrots that saw it, acknowledged the resemblance. So much was he charmed with the pursuit and his prospects, that when Wolcot asked him how he liked painting? "Better," he answered, "than bread and meat."

In the twentieth year of his age he went to London, and under the patronage of Wolcot, at first excited great attention. Of his success, Northcote gives the following account. "The novelty and originality of manner in his pictures, added to his great abilities, drew an universal attention from the connoisseurs, and he was immediately surrounded and employed by all the principal nobility of England. When he ceased, and that was soon, to be a novelty, the capricious public left him in disgust. They now looked out for his defects alone, and he became, in his turn, totally neglected and forgotten; and, instead of being the sole object of public attention, and having the street where he lived so crowded with coaches of the nobility as to become a real nuisance to the neighborhood, 'so,' as he jestingly observed to me, 'that he thought he must place cannon at the door to keep the multitude off from it,' he now found himself as entirely deserted as if his house had been infected with the plague. Such is the world!" His popularity, however, continued rather longer than this description would seem to imply. When the wonder of the town began to abate, the country came gaping in; and ere he had wearied both, he had augmented the original thirty guineas with which he commenced the adventure, to a very comfortable sum; had furnished a house in Orange Court, Leicester Fields. The first use which he made of his success, was to spread comfort around his mother; and then he proceeded with his works and studies like one resolved to deserve the distinction which he had obtained. His own strong natural sense, and powers of observation, enabled

him to lift the veil which the ignorant admiration of the multitude had thrown over his defects; he saw where he was weak, and labored most diligently to improve himself. His progress was great, and visible to all, save the leaders of taste and fashion. When his works were crude and unstudied, their applause was deafening: when they were such as really merited a place in public galleries, the world, resolved not to be infatuated twice with the same object, paid them a cold, or at least, a very moderate attention. "Reynolds," it has been remarked, "is the only eminent painter who has been able to charm back the public to himself after they were tired of him." The somewhat rough and unaccommodating manners of Opie were in his way; it requires delicate feet to tread the path of portraiture; and we must remember that he was a peasant, unacquainted with the elegance of learning, and unpolished by intercourse with the courtesies and amenities of polite life. He was thrown into the drawing-room, rough and rude as he came from the hills of Cornwall, and had to acquit himself as well as he could.

He divided his time between his profession and the cultivation of his mind. He was conscious of his defective education; and, like Reynolds, desired to repair it by mingling in the company of men of learning and talent, and by the careful perusal of the noblest writers. "Such were the powers of his memory that he remembered all he had read. Milton, Shakespeare, Dryden, Pope, Gray, Cowper, Butler, Burke, and Dr. Johnson, he might, to use a familiar expression, be said to know by heart." A man of powerful under-

standing and ready apprehension, "who remembered all he read," and who had nine of the greatest and most voluminous of our authors by heart, could never be at any loss in company, if he had tolerable skill in using his stores. To his intellectual vigor we have strong testimony. "Mr. Opie," said Horne Tooke, "crowds more wisdom into a few words than almost any man I ever knew; he speaks as it were in axioms, and what he observes is worthy to be remembered." "Had Mr. Opie turned his powers of mind," says Sir James Mackintosh, "to the study of philosophy, he would have been one of the first philosophers of the age. I was never more struck than with his original manner of thinking and expressing himself in conversation; and had he written on the subject, he would, perhaps, have thrown more light on the philosophy of his art than any man living."

The chief excellence of Opie lies in portrait painting. He has great vigor, breadth, and natural force of character. His portrait of Charles Fox has been justly commended, nor does the circumstance of his having completed the likeness from the bust by Nollekens, as related by Smith, diminish his merit. When Fox, who sat opposite to Opie at the academy dinner, given in the exhibition-room, heard the general applause which his portrait obtained, he remembered that he had given him less of his time than the painter had requested, and said across the table, "There, Mr. Opie, you see I was right; everybody thinks it could not be better. Now, if I had minded you, and consented to sit again, you most probably would have spoiled the picture."

"He painted what he saw," says West, "in the most masterly manner, and he varied little from it. He saw nature in one point more distinctly and forcibly than any painter who ever lived. The truth of color, as conveyed to the eye through the atmosphere, by which the distance of every object is ascertained, was never better expressed than by him. He distinctly represented local color in all its various tones and proportions, whether in light or in shadow, with a perfect uniformity of imitation. Other painters frequently made two separate colors of objects in light and in shade, — Opie never. With him no color, whether white, black, primary or compound, ever, in any situation, lost its respective hue."

His works were not the offspring of random fits of labor after long indulgence in idleness, they were the fruit of daily toil, in which every hour had its allotted task. "He was always in his painting-room," says his wife, Amelia Opie, "by half past eight o'clock, in winter, and by eight, in summer; and there he generally remained closely engaged in painting, till half past four, in winter, and till five, in summer. Nor did he allow himself to be idle when he had no pictures bespoken, and as he never let his execution rust for want of practice, he, in that case, either sketched out designs for historical or fancy pictures, or endeavored, by working on an unfinished picture of me, to improve himself by incessant practice in that difficult branch of art, female portraiture. Neither did he suffer his exertions to be paralyzed by neglect the most unexpected and disappointment the most undeserved."

"During the nine years that I was his wife,"

says Mrs. Opie, "I never saw him satisfied with any one of his productions; and often, very often, have I seen him enter my sitting-room, and, in an agony of despondence, throw himself on the sofa, and exclaim: 'I am the most stupid of created beings, and I never, never shall be a painter as long as I live.' He used to study at Somerset House, where the pictures were hung up, with more persevering attention and thirst for improvement than was ever exhibited, perhaps, by the lowest student in the schools, and on his return, I never heard him expatiate on his own excellences, but sorrowfully dwell on his own defects."

When Henry Fuseli was made keeper of the Royal Academy, Opie was elected to the professorship of painting. He gave four lectures, which contain many discriminating remarks and valuable thoughts, though they are deficient in deep discernment, and an original grasp of mind. The following passage embodies important hints, not only for young artists, but for every young man who is aspiring to usefulness in any situation of life.

"Impressed as I am at the present moment, with a full conviction of the difficulties attendant on the practice of painting, I cannot but feel it also my duty to caution every one who hears me, against entering into it from improper motives and with inadequate views of the subject; as they will thereby only run a risk of entailing misery and disgrace on themselves and their connections during the rest of their lives. Should any student therefore happen to be present who has taken up the art, on the supposition of finding it an easy and amusing employment — any one who has

been sent into the academy by his friends, with the idea that he may cheaply acquire an honorable and profitable profession — any one who has mistaken a petty kind of imitative monkey talent for genius — any one who hopes by it to get rid of what he thinks a more vulgar or disagreeable situation, to escape confinement at the counter or desk — any one urged merely by vanity or interest, or, in short, impelled by any consideration but a real and unconquerable passion for excellence — let him drop it at once, and avoid these walls and every thing connected with them as he would the pestilence; for if he have not this unquestionable liking, in addition to all the requisites above enumerated, he may pine in indigence, or pass through life as a hackney likeness-taker, a copier, a drawing-master or pattern-drawer to young ladies, or he may turn picture-cleaner, and help time to destroy excellences which he cannot rival, but he must never hope to be in the proper sense of the word, a painter.

"He who wishes to be a painter, must overlook no kind of knowledge. He must range deserts and mountains for images, picture upon his mind every tree of the forest and flower of the valley, observe the crags of the rock and the pinnacles of the palace, follow the windings of the rivulet, and watch the changes of the clouds; in short, all nature, savage or civilized, animate or inanimate, the plants of the garden, the animals of the wood, the minerals of the mountains, and the motions of the sky, must undergo his examination. Whatever is great, whatever is beautiful, whatever is interesting, and whatever is dreadful, must be familiar to his imagination, and concur to store his mind

with an inexhaustible variety of ideas ready for association on every possible occasion, to embellish sentiment and to give effect to truth. It is moreover absolutely necessary that then the epitome of all — his principal subject and his judge — should become a particular object of his investigation; he must be acquainted with all that is characteristic and beautiful, both in regard to his mental and bodily endowments; must study their analogies, and learn how far moral and physical excellence are connected and dependent one on the other. He must farther observe the power of the passions in all their combinations, and trace their changes, as modified by constitution or by the accidental influences of climate or custom, from the sprightliness of infancy to the despondency of decrepitude; he must be familiar with all the modes of life; and, above all, endeavor to discriminate the essential from the accidental, to divest himself of the prejudices of his own age and country, and, disregarding temporary fashions and local taste, learn to see nature and beauty in the abstract, and rise to general and transcendental truth, which will always be the same." These are noble sentences, and worthy of the regard of those who *paint the mind*, who are employed in intellectual portraiture, and whose work is to survive all material fabrics.

Mr. Opie died on the ninth day of April, 1807. During his sickness he imagined himself to be occupied in his favorite pursuit, and continued painting, in idea, till death interposed. He was interred in St. Paul's cathedral, near Sir Joshua Reynolds.

"In person," says Allan Cunningham, from whom we have compiled the preceding biography,

"Opie looked like an inspired peasant. Even in his more courtly days there was a country air about him, and he was abrupt in his language and careless in his dress, without being conscious of either. His looks savored of melancholy; some have said of moroseness. The portrait which he has left of himself shows a noble forehead and an intellectual eye. There are few who cannot feel his talents, and all must admire his fortitude. He came coarse and uneducated from the country into the polished circles of London, was caressed, invited, praised and patronized for one little year or so, and then the giddy tide of fashion receded; but he was not left a wreck; he had that strength of mind which triumphs over despair. He estimated the patronage of fickle ignorance at what it was worth, and lived to invest his name with a brighter, as well as a steadier, halo than that of fashionable wonders.

NATHANIEL SMITH.

Nathaniel Smith was born at Woodbury, in the State of Connecticut, January 6, 1762. He was destitute of the means of an early education, and, while yet a youth, was actively and successfully engaged in pursuits in which he discovered such discretion and strength of intellect as promised future eminence. An incident, of no great importance in itself, induced him to enter upon the study of the profession of law. Having engaged in this pursuit, he persevered in it with surprising constancy of purpose, unappalled by difficulties, which ordinary minds would have deemed entirely insurmountable. He studied under the direction of the celebrated judge Tapping Reeve, of Litchfield, founder of the law-school in that place, and the sound and enlightened guide of many young men who have become eminent in their profession. Probably no individual who has lived in this country has done so much as judge Reeve, in implanting in the breasts of lawyers the great principles of morality and religion.

Mr. Smith entered the office of judge Reeve about the close of the war of the Revolution, and such was his progress as to afford proof of the soundness of his judgment in the choice of his profession. In 1787, he was admitted to the bar, and his first efforts showed a mind of a superior order. Though surrounded by powerful competitors, he soon rose to distinction, and was pronounced an able advocate.

In 1795, Yale college bestowed on him the honorary degree of Master of Arts, and in the same year he was chosen Representative in the Congress of the United States, where he continued four years. On his declining a third election to Congress, he was chosen a member of the upper house (Senate,) of his native State, in which office he was continued by annual election for several years. In these various stations he acquired great respect for his manly eloquence, his firmness, his political integrity, and his comprehensive views. In October, 1806, he was appointed a judge of the supreme court. This office he accepted at a great pecuniary sacrifice, as thereby he relinquished his lucrative and extensive professional employments. He remained in this important office until May, 1819.

Not having had the advantages of early instruction and discipline, his style and manner of speaking showed nothing of the polished refinement of the scholar, but it manifested that which is of far greater value, a mind thoroughly disciplined, acquainted with the subjects on which it was occupied, and intensely engaged in convincing the understandings of his hearers. In his arguments at the bar, in his speeches before deliberative assemblies, and in his opinions on the bench, he discussed nothing but the merits of the question; and here he always appeared, as in truth he was, an able man. His language was not classical, but appropriate, his eloquence was not ornamented, but powerful; it fixed attention and produced conviction. He never sought to display qualities which he did not possess. He reasoned according to the strict rules of logic, without ever having

studied them — he spoke well, without any theoretical knowledge of the arts of the rhetorician. To a mind naturally strong and thoroughly disciplined he added so much knowledge of the technicalities and forms of the law, as enabled him to discern the nature of the questions submitted to him, and, with the aid of his own resources, to decide correctly in cases of doubt and difficulty. To obstacles which could be overcome he never yielded. The powers of his mind rose with every difficulty which he had to encounter, and he appeared to be the strongest when sustaining the heaviest weight.

Judge Smith was never a skeptic in religion. He always entertained great regard for Christianity. He had, notwithstanding, doubts respecting the reality of that change which is produced in the hearts of men by the influence of the Spirit of God. At length, at the age of forty-six years, in the full possession of his understanding, and at a time when his imagination could not lead him astray, and in the hour of calm and deliberate reflection, he believed that such a change was produced in his own bosom. Under its influence he afterwards lived. His religious impressions were kept entirely concealed, for a time, from his most intimate friends. This proceeded, as is supposed, from an excessive delicacy as well as from a mistaken sense of duty. Placed as he was in a high and responsible office, and fearing that, in his situation, an avowal of his faith in Christ might be attributed to improper motives, he retained his feelings within his own breast. When his situation in relation to the public became such as to prevent any misconstruction of his motives, he

hesitated no longer to profess his belief in religious truth, and his high hopes growing out of it. His trust in the merits and grace of the Redeemer of men cheered and supported him during the remainder of his days.

He died in the calm and blessed expectation of eternal life, at Woodbury, on the ninth of March, 1822, in the sixty-first year of his age.

JOHN GODFREY VON HERDER.

This distinguished author was born on the 25th of August, 1744, at Mohrangen, a small town in Eastern Prussia, where his father taught a school for girls. His early education was not favorable to the development of his faculties. His father confined his reading to a very few books, but his love of learning was so strong as to lead him to prosecute his studies in secret. The clergyman of the place employed the boy as a copyist, and soon discovered his talents, and allowed him to participate in the lessons in Latin and Greek, which he gave his own children. At this time young Herder suffered from a serious disease of the eyes, which was the occasion of his becoming better known to a Russian surgeon, who lived in the clergymen's house, and who was struck with the engaging manners, and pleasing appearance of the youth. He offered to take Herder with him to Königsberg and to Petersburg, and to teach him surgery gratuitously. Herder, who had no hopes of being able to follow his inclinations, left his native city in 1762; but, in Königsberg, he fainted at the first dissection at which he was present. He now resolved to study theology. Some gentlemen to whom he became known, and who immediately interested themselves in his favor, procured him an appointment in Frederic's College, where he was at first tutor to some scholars, and, at a later period, instructor

in the first philosophical, and in the second Latin class, which left him time to study. During this period he became known to the celebrated Kant, who permitted him to hear all his lectures gratuitously. He formed a more intimate acquaintance with Hamann. His unrelaxing diligence penetrated the most various branches of science, theology, philosophy, philology, natural and civil history, and politics. In 1764, he was appointed an assistant teacher at the cathedral school of Riga, with which office that of a preacher was connected. His pupils in school, as well as his hearers at church, were enthusiastically attached to him, so much that it was thought necessary to give him a more spacious church. His sermons were distinguished by simplicity, united with a sincere devotion to evangelical truth and original investigation. While on a visit to Strasburg, in 1767, he was invited to become court preacher, superintendent and consistorial counsellor, at Bückeburg, whither he proceeded in 1771. He soon made himself known as a distinguished theologian, and, in 1775, was offered a professorship at Göttingen, which he however, did not accept immediately, because the king had not confirmed his appointment unconditionally; and, contrary to custom, he was expected to undergo a kind of examination. But, being married, Herder did not feel at liberty to decline the appointment. On the very day when he had resolved to go to Göttingen, he received an invitation to become court preacher, general superintendent and consistorial counsellor at Weimar. This appointment was through the influence of Göthe. He arrived at Weimar in October, 1776. It was

at the time when the duke Augustus and the princess Amelia had collected many of the most distinguished German literati at their court. Weimar was greatly benefited by Herder's labors as a pulpit orator, inspector of the schools of the country, the patron of merit and founder of many excellent institutions. In 1801, he was made president of the high consistory, a place never before given to a person not of the nobility. Herder was subsequently made a nobleman by the elector of Bavaria. He says himself that he accepted the rank for the sake of his children. Herder died, on the 18th of December, 1803. Germany is deeply indebted to him for his valuable works in almost every branch of literature, and few authors have had a greater influence upon the public taste in that country. His works were published in forty-five octavo volumes, in 1806. Another edition is now publishing in sixty small volumes. As a theologian, Herder contributed to a better understanding of the historical and antiquarian parts of the Old Testament. "In early years," says Herder, "when the fields of knowledge lay before me, with all the glow of a morning sun, from which the meridian sun of life takes away so much of the charm, the idea often recurred to my mind, whether, like other great subjects of thought, each of which has its philosophy and science, that subject also, which lies nearest to our hearts — the history of mankind, viewed as a whole — might not also have its philosophy and science. Every thing reminded me of this idea; metaphysics and morals, natural philosophy and natural history lastly, and most powerfully, religion." This is the key to Herder's

life. The object of his investigations was to find the point from which he might calmly survey every thing, and see how all things converge. "It is," says Frederic Schlegel, "the very perception and feeling of the poetical, in the character of natural legends, which forms the most distinguishing feature in the genius of Herder. He has an energy of fancy by which he is enabled to transport himself into the spirit and poetry of every age and people. The poetry of the Hebrews was that which most delighted him. He may be called the mythologist of German literature, on account of this gift, this universal feeling of the spirit of antiquity. His power of entering into all the shapes and manifestations of fancy, implies in himself a very high degree of imagination. His mind seems to have been cast in so universal a mould, that he might have attained to equal eminence, either as a poet or philosopher."

Notwithstanding his genius, Herder had great difficulties to surmount; want of early education and encouragement, poverty, and a serious and lasting disease of the eyes. He was a most laborious and indefatigable student. He did not attempt to arrive at truth by metaphysical speculation, but by observation, by the constant study of nature and the mind, in all its works, in the arts, law, language, religion, medicine, poetry, &c.

In 1819, the grand duke of Weimar ordered a tablet of cast iron to be placed on his grave, with the inscription, *Licht, Liebe Leben.* Light, Love, Life.

GIOVANNI BATTISTA BELZONI.

This enterprising traveller was born at Padua, Italy, in 1778, where his father was a barber. The family, however, had belonged originally to Rome; and it is related that Belzoni, when only thirteen years of age, betrayed his disposition for travelling, by setting out one day along with his younger brother to make his way to that city, which he had long been haunted with a passionate desire to see, from hearing his parents so often speak of it. The failing strength and courage of his brother, however, forced him to relinquish this expedition, after they had proceeded as far as the Apennines; and he returned to assist his father once more in his shop, as he had already, for some time, been doing. But when he was three years older, nothing could detain him any longer in his native place; and he again took the road to Rome, which he now actually reached. It is said that on his first arrival in this capital, he applied himself to the acquirement of a knowledge of the art of constructing machines for the conveyance and raising of water, with the view probably of obtaining a livelihood by the exhibition of curious or amusing experiments in that department of physics. It is certain, however, that he eventually adopted the profession of a monk. The arrival of Bonaparte in Italy, in 1800, brought him the opportunity, which he embraced, of throwing off his monastic habit; being, by this

time, heartily tired of the idleness and obscurity to which it consigned him. He then pursued, for some time, a wandering life, having, in the first instance, returned to his native town, and then proceeded in quest of employment to Holland, from whence, in about a year afterwards, he came back to Italy. By this time he had attained so uncommon a height, with strength proportioned to it, that he was an object of wonder wherever he was seen. It was probably with the expectation of being able to turn these personal advantages to account, that he determined, in 1803, to go over to England. On arriving there, accordingly, he first attempted to gain a maintenance by walking over the country exhibiting hydraulic experiments, and feats of muscular strength; and accompanied by his wife, an Englishwoman whom he had married soon after his arrival, he visited with this object all the principal towns both of Great Britain and Ireland. He continued for about nine years in England. In 1812, he sailed with his wife for Lisbon. After spending some time in that city, he proceeded to Madrid, where he attracted considerable attention by his performances. From Spain he went to Malta; and here, it is supposed, the idea first suggested itself to him of passing over to Egypt, as others of his countrymen had already done, and offering his services to the Pacha, the active and enterprising Mohammed Ali. Accordingly, carrying with him a recommendation from a Maltese agent of the Pacha's, he proceeded, still accompanied by his wife, to Cairo. On presenting himself to Ali, he was immediately engaged, on the strength of his professed skill in hydraulics, to construct a

machine for watering some pleasure gardens at Soubra, on the Nile. This undertaking, it is said, he accomplished to the Pacha's satisfaction; but an accident having occurred to one of the persons looking on, at the first trial of the machine, the Turkish superstition, under the notion that what had happened was a bad omen, would not suffer the use of it to be continued. Belzoni was once more thrown on his own resources, probably as much at a loss as ever, what course to adopt.

At this time, the late Mr. Salt, the learned orientalist, was English Consul in Egypt, and embracing the opportunity which his situation afforded him, was actively employed in investigating and making collections of the remains of antiquity with which that country abounded. For this purpose he kept several agents in his employment, whose business it was to make researches, in all directions, after interesting objects of this description. To Mr. Salt, Belzoni now offered his services in this capacity, and he was immediately employed by that gentleman, in an affair of considerable difficulty: the removing and transporting to Alexandria of the colossal granite bust of Memnon, which lay buried in the sands near Thebes. The manner in which Belzoni accomplished this, his first enterprise in his new line of pursuit, at once established his character for energy and intelligence. Dressing himself as a Turk, he proceeded to the spot, and there half persuaded and half terrified the peasantry into giving him the requisite assistance in excavating and embarking the statue, till he had at last the satisfaction of seeing it safely deposited in the boat intended for its conveyance down the Nile.

It reached England, and was placed in the British Museum.

Belzoni had now found his proper sphere, and henceforward his whole soul was engaged in the work of exploring the wonderful country in which he was, in search of the monuments of its ancient arts and greatness. In this occupation he was constantly employed, sometimes in the service of Mr. Salt, and sometimes on his own account. The energy and perseverance of character which he exhibited, were truly astonishing. In despite of innumerable obstacles, partly of a physical nature, and partly arising from the opposition of the natives, he at last succeeded in penetrating into the interior of the temple of Ihamboul, in Upper Egypt, which was so enveloped in sand, that only its summit was visible. On returning from this expedition, he next undertook a journey to the Valley of Bebanel Malonk, beyond Thebes, where, from a slight inspection on a former occasion of the rocky sides of the hills, he had been led to suspect that many tombs of the old inhabitants would be found concealed in them. For some time he searched in vain in all directions for any indication of what he had expected to find, till at last his attention was turned to a small fissure in the rock, which presented to his experienced eye something like the traces of human labor. He put forward his hand to examine it, when the stones, on his touching them, tumbled down, and discovered to him the entrance to a long passage, having its sides ornamented with sculpture and paintings. He at once entered the cavern, proceeded forward, and, after overleaping several obstacles, found himself in a sepulchral

chamber, in the centre of which stood an alabaster sarcophagus, covered with sculptures. He afterwards examined this sarcophagus, and with immense labor, took exact copies of the drawings, consisting of nearly a thousand figures, and the hierogyphic inscriptions, amounting to more than five hundred, which he found on the walls of the tomb. It was from these copies that Belzoni formed the representation or model of this tomb, which he afterwards exhibited in London and Paris.

On returning to Cairo from this great discovery, he immediately engaged in a new investigation, which conducted him to another perhaps still more interesting.

He determined to make an attempt to penetrate into one of the pyramids. At length in the pyramid called Cephrenes, he discovered the entrance to a passage which led him into the centre of the structure. Here he found a sepulchral chamber, with a sarcophagus in the middle of it, containing the bones of a bull — a discovery, which has been considered as proving that these immense edifices were in reality erected by the superstition of the old Egyptians for no other purpose than to serve each as a sepulchre for one of their brute divinities.

Encouraged by the splendid success which attended his efforts, and which had made his name famous in all parts of the literary world, Belzoni engaged in various other enterprises of a similar character. He also made several journeys in the remote parts of Egypt, and into the adjoining regions of Africa. He set sail for Europe in September, 1819. The first place which he visit-

ed was his native city, from which he had been absent nearly twenty years. He presented to the Paduans two lion-headed granite statues, which were placed in a conspicuous situation in the palace of Justice. A medal was at the same time struck in honor of the giver, on which were inscribed his name and a recital of his exploits. From Italy Belzoni hastened to England, where the rumor of his discoveries had already excited a greater interest than in any other country. In 1820, an account of his travels and discoveries appeared in a quarto volume, with another volume of plates, in folio. It soon passed through three editions, while translations of it into French and Italian appeared at Paris and Milan. After this, Belzoni visited successively, France, Russia, Sweden, and Denmark. Returning to England he undertook, under the auspices of government, the perilous attempt of penetrating into central Africa. Proceeding to Tangiers he went from thence to Fez. Unexpected difficulties prevented his advancing in that direction. On this disappointment, he sailed for Madeira, and from thence, in October, 1823, he set out for the mouth of the river Benin, on the western coast of Africa, with the intention of making his way to the interior from that point. A malady, however, attacked him almost as soon as he stepped his foot on shore. He expired at Gato, on the 3d of December, 1823. His remains were interred on the shore, under a plane tree. An inscription in English was afterwards placed over his grave.

WILLIAM CAXTON.

"The ease which we now find in providing and dispersing what number of copies of books we please by means of the press," says Dr. Middleton, in his Free Inquiry, "makes us apt to imagine, without considering the matter, that the publication of books was the same easy affair in all former times as in the present. But the case was quite different. For, when there were no books in the world but what were written out by hand, with great labor and expense, the method of publishing them was necessarily very slow, and the price very dear; so that the rich and curious only would be disposed or able to purchase them; and to such, also, it was difficult to procure them or to know even where they were to be bought."

Of the truth of these remarks of Dr. Middleton, a great variety of facts might be brought forward in proof. In 1299, the Bishop of Winchester borrowed a Bible, in two volumes, folio, from a convent in that city, giving a bond, drawn up in the most formal and solemn manner, for its due return. This Bible had been given to the convent by a former Bishop, and, in consideration of this gift and one hundred marks, the monks founded a daily mass for the soul of the donor. In the same century, several Latin Bibles were given to the University of Oxford, on condition that the students who read them should deposit a cautionary pledge. And even after manuscripts were

multiplied, by the invention of linen paper, it was enacted by the statutes of St. Mary's college, at Oxford, in 1446, that "no scholar shall occupy a book in the library above one hour, or two hours at most, lest others should be hindered from the use of the same." Money was often lent on the deposit of a book; and there were public chests in the universities and other seminaries, in which the books so deposited were kept. They were often particularly named and described in wills, generally left to a relative or friend, in fee, and for the term of his life, and afterwards to the library of some religious house. "When a book was bought," observes Mr. Walton, "the affair was of so much importance, that it was customary to assemble persons of consequence and character, and to make a formal record that they were present on the occasion." The same author adds: "Even so late as the year 1471, when Louis XI, of France, borrowed the works of the Arabian physician, Rhasis, from the faculty of medicine, at Paris, he not only deposited, by way of a pledge, a valuable plate, but was obliged to procure a nobleman to join with him as party in a deed, by which he bound himself to return it, under a considerable forfeiture." Long and violent altercations, and even lawsuits, sometimes took place, in consequence of the disputed property of a book.

Books were so scarce in Spain in the tenth century, that several monasteries had among them only one copy of the Bible, one of Jerome's Epistles, and one of several other religious books. There are some curious instances given by Lupus, abbot of Ferrieris, of the extreme scarcity of classical manuscripts in the middle of the ninth

century. He was much devoted to literature, and from his letters appears to have been indefatigable in his endeavors to find out such manuscripts, in order to borrow and copy them. In a letter to the pope, he earnestly requests of him a copy of Quinctilian, and of a treatise of Cicero; "for," he adds, "though we have some fragments of them, a complete copy is not to be found in France." In two other of his letters, he requests of a brother abbot the loan of several manuscripts, which he assures him shall be copied and returned as soon as possible, by a faithful messenger. Another time he sent a special messenger to borrow a manuscript, promising that he would take very great care of it, and return it by a safe opportunity, and requesting the person who lent it to him, if he were asked to whom he had lent it, to reply to some near relation of his own, who had been very urgent to borrow it. Another manuscript, which he seems to have prized much, and a loan of which had been so frequently requested, that he thought of *banishing* it somewhere, that it might not be destroyed or lost, he tells a friend he may perhaps lend him when he comes to see him, but that he will not trust it to the messenger who had been sent for it, though a monk, and trust-worthy, because he was travelling on foot.

Respecting the price of manuscript books, we are not in the possession of many facts. Plato paid one hundred minæ, equal to £375, for three small treatises by Philolaus, the Pythagorean. After the death of Speusippus, Plato's disciple, his books, few in number, were purchased by Aristotle, for about £675. It is said, that St. Jerome nearly ruined himself by the purchase of religious

works alone. Persons of moderate fortunes could not afford the means of procuring them, nor the rich even without the sacrifice of some luxuries. The mere money which was paid for them in the dark ages, whenever a person distinguished himself for his love of literature, was seldom the sole or the principal expense. It was often necessary to send to a great distance and to spend much time in finding out where they were. In the ninth century, an English bishop was obliged to make five journeys to Rome, principally in order to purchase books. For one of his books thus procured, king Alfred gave him an estate of eight hides of land, or as much as eight ploughs could till. About the period of the invention of cotton paper, 1174, the homilies of St. Bede and St. Augustine's Psalter were bought by a prior in Winchester, from the monks of Dorchester, in Oxfordshire, for twelve measures of barley and a pall richly emroidered in silver.

Stow informs us, that in 1274, a Bible, in nine volumes, fairly written, with a gloss, or comment, sold for fifty marks, or £33 6*s*. 8*d*. About this time the price of wheat averaged 3*s*. 4*d*. a quarter, a laborer's wages were one and a half pence a day, a harvest-man's, two pence. On a blank page of Comestor's Scholastic History, deposited in the British museum, it is stated that this manuscript was taken from the king of France, at the battle of Poictiers. It was afterwards purchased by the earl of Salisbury for a hundred marks, or £66 13*s*. 4*d*. It was directed, by the last will of his countess, to be sold for forty livres. At this time the king's surgeon's pay was £5. 13*s*. 4*d*. per annum, and one shilling a day besides. Master-

carpenters had four pence a day; their servants two pence.

At the beginning of the fourteenth century, some books were bequeathed to Merton college, Oxford, of which the following are the names and valuation. A Scholastic History, twenty shillings; a Concordance, ten shillings; the four greater prophets, with glosses, five shillings; a Psalter, with glosses, ten shillings; St. Austin on Genesis, ten shillings. About the year 1400, a copy of the Roman *de la Rou* was sold before the palace-gate, at Paris, for £33 6*s.* 6*d.* The countess of Anjou paid for a copy of the homilies of Bishop Haiman, two hundred sheep, five quarters of wheat, five quarters of barley, and five quarters of millet. On the conquest of Paris, in 1425, the duke of Bedford sent the royal library to England. It consisted of only eight hundred and fifty-three volumes, but it was valued at more than two thousand two hundred pounds sterling. Further facts of a similar character will be found in the life of the individual to which we now proceed.

William Caxton was born in the weald of Kent, England, about the year 1412. At this period learning of all kinds was in a much more depressed state in England than in most of the continental countries, in consequence, principally, of the civil war in which the nation was embroiled, the habits of restlessness thus produced, and the constant preoccupation of the time and thoughts of men in promoting the cause they espoused, and in protecting their lives and property. Under these circumstances the most plain and common education was often neglected. Caxton's parents, however, performed their duty to him.

"I am bounden," says he, "to pray for my father and mother, that, in my youth sent me to school, by which, by the sufferance of God, I get my living, I hope, truly."

When he was about fifteen or sixteen he was put an apprentice to William Large, a mercer of London, and afterwards mayor. The name *mercer* was given at that time to general merchants, trading in all kinds of goods. After he had served his apprenticeship, Caxton took up his freedom in the mercer's company, and became a citizen of London. Some subsequent years he spent in travelling in various countries on the continent of Europe. In 1464, he was appointed ambassador to the court of the duke of Burgundy. During his residence in the Low Countries he acquired or perfected his knowledge of the French language, gained some knowledge of Flemish or Dutch, imbibed a taste for literature and romance, and, at great expense, made himself master of the art of printing.

About 1472, Caxton returned to England, and introduced, in all probability, the art of printing into that country. The common opinion is that the "Game of Chess" was the first book printed by Caxton, though Mr. Dibdin thinks that the "Romance of Jason" was printed before it. Caxton was most indefatigable in cultivating his art. Besides the labor necessarily attached to his press, he translated not fewer than five thousand closely printed folio pages, though well stricken in years. The productions of his press amount to sixty-four. In 1480, he published his Chronicle, and his Description of Britain, which is usually subjoined to it. These were very popular, having been re-

printed four times in *this century* and seven times in the *sixteenth century*.

"After divers works," says he, "made, translated and achieved, having no work in hand, I, sitting in my study, where, as lay many divers pamphlets and books, it happened that to my hand came a little book in French, which lately was translated out of Latin, by some noble clerk of France, which book is named 'Æneid,' as made in Latin by that noble person and great clerk, Virgil, which book I saw over, and read therein. (He then describes the contents.) In which book I had great pleasure, by cause of the fair and honest terms and words in French, which I never saw tofore like, ne none so pleasant, ne so well ordered; which book, as me seemed, should be much requisite to noble men to see, as well for the eloquence as histories. And when I had advised me in this said book, I deliberated, and concluded to translate it into English; and forthwith took a pen and ink and wrote a leaf or twain, which I oversaw again, to correct it; and when I saw the fair and strange terms therein, I doubted that it should not please some gentlemen which late blamed me, saying that in my former translations I had over curious terms, which could not be understood of common people; and desired me to use old and homely terms in my translations; and fain would I satisfy every man, and so to do, took an old book and read therein; and certainly the English was so rude and broad, that I could not well understand it; and also, my lord abbot of Westminster, did do show to me late certain evidences, written in old English, for to reduce it into our English now used; and certainly it was

written in such wise, that was more like to Dutch than to English. I could not reduce, nor bring it to be understanden. Certainly the language now used varieth far from that which was used and spoken when I was born; for we, Englishmen, been born under the domination of the moon, which is never at rest, but ever wavering. The most quantity of the people understand not Latin nor French in this realm of England."

Caxton seems to have been much puzzled and perplexed about the language he should use in his traslations; for, while some advised him to use old and homely terms, others, "honest and great clerks," he adds, "have been with me, and desired me to write the most curious terms that I could find, — and thus, betwixt plain, rude and curious, I stand abashed."

Among the books which Caxton published were two editions of Chaucer's Tales. He seems to have had a veneration for the memory of this poet, and to have formed, with sound judgment and good taste, a most correct and precise estimate of the peculiar merits of his poetry. As a proof of the former, we may mention, that Caxton, at his own expense, procured a long epitiaph to be written in honor of Chaucer, which was hung on a pillar near the poet's grave in Westminster Abbey. The following remarks of Caxton show that he was able thoroughly to relish the merits and beauties of Chaucer's poetry. "We ought to give a singular laud unto that noble and great philosopher, Geoffrey Chaucer, the which, for his ornate writings in our tongue, may well have the name of a laureate poet. For tofore, that he embellished and ornated and made fair our English,

in this realm was made rude speech and incongruous, as yet appeareth by old books, which, at this day ought not to have place, ne be compared unto his beauteous volumes and ornate writings, of whom he made many books and treatises of many a noble history, as well in metre as in rhyme and prose; and then so craftily made, that he comprehended his matters in short, quick and high sentences, eschewing perplexity; casting away the chaff of superfluity, and showing the picked grain of sentence, uttered by crafty and *sugared eloquence*. In all his works he excelled, in mine opinion, all writers in our English, for he writeth no void words, but all his matter is full of high and quick sentence, to whom ought to be given laud and praise for his noble making and writing."

Caxton died in 1490–1, was buried in St. Margaret's, and left some books to that church. "His character," says his biographer, "may be collected from the account we have given of his labors. He was possessed of good sense and sound judgment; steady, persevering, active, zealous and liberal in his services for that important art which he introduced into England; laboring not only as printer, but as translator and editor."

RICHARD BAXTER.

Richard Baxter was born on the 12th of November, 1615, at Rowton, in Shropshire, England. Here he spent, with his grandfather, the first ten years of his life. His father was a freeholder, and possessed of a moderate estate; but having been addicted to gaming in his youth, his property become so deeply involved, that much care and frugality were required to disencumber it at a future period of his life. He became a pious man about the time of the birth of Richard. To him the lad was indebted for his first religious instructions. There must have been in Richard, when a child, some striking indications of religious feeling, for his father remarked to Dr. Bates, that he would even then reprove the improper conduct of other children, to the astonishment of those who heard him. Baxter's early impressions and convictions, though often like the morning cloud and early dew, were never entirely dissipated, but at last fully established themselves in a permanent influence on his character. His early education was very imperfectly conducted. From six to ten years of age, he was under the four successive curates of the parish, two of whom never preached, and the two, who had the most learning of the four, drank themselves to beggary, and then left the place. At the age of ten, he was removed to his father's house, where Sir William Rogers, a blind old man, was parson. One of his curates,

who had succeeded a person who was driven away on being discovered to have officiated under forged orders, was Baxter's principal schoolmaster. This man had been a lawyer's clerk, but hard drinking drove him from that profession, and he turned curate for a piece of bread. He preached only once in Baxter's time, and then was drunk! From such men what instruction could be expected! How wretched must the state of the country have been, when they could be tolerated either as teachers or ministers! His next instructer, who loved him much, he tells us was a grave and eminent man, and expected to be made a bishop. He also, however, disappointed him; for during no less than two years, he never instructed him one hour; but spent his time, for the most part, in talking against the Puritans. In his study, he remembered to have seen no Greek book but the New Testament; the only father was Augustine de Civitate Dei; there were a few common modern English works, and for the most of the year, the priest studied Bishop Andrews' Sermons. Of Mr. John Owen, master of the free school at Wroxeter, he speaks more respectfully. To him he was chiefly indebted for his classical instruction. He seems to have been a respectable man, and under him, Baxter had for his schoolfellows the two sons of Sir Richard Newport, (one of whom became Lord Newport,) and Dr. Richard Allestree, who afterwards was Regius professor of divinity at Oxford, and provost of Eton college. When fitted for the university, his master recommended that, instead of being sent to it, he should be put under the tuition of Mr. Richard Wickstead, chaplain to the coun-

cil at Ludlow, who was allowed by the king to have a single pupil. But he also neglected his trust. The only advantage young Baxter had with him, was the enjoyment of time and books. "Considering the great neglect," says Mr. Orme, his biographer, "of suitable and regular instruction, which Baxter experienced in his youth, it is wonderful that he ever rose to eminence. Such disadvantages are very rarely altogether conquered. But the strength of his genius, the ardor of his mind, and the power of his religious principles, compensated for minor defects, subdued every difficulty, and bore down, with irresistible energy, every obstacle that had been placed in his way."

During his short residence at Ludlow castle, Baxter made a narrow escape from acquiring a taste for gaming, of which he gives a curious account. The best gamester in the house undertook to teach him to play. The first or second game was so nearly lost by Baxter, that his opponent betted a hundred to one against him, laying down ten shillings to his sixpence. He told him there was no possibility of his winning, but by getting one cast of the dice very often. No sooner was the money down, than Baxter had every cast which he wished; so that before a person could go three or four times round the room, the game was won. This so astonished him that he believed the devil had the command of the dice, and did it to entice him to play; in consequence of which he returned the ten shillings, and resolved never to play more. Whatever may be thought of the fact, or of Baxter's reasoning on it, the result to him was important and beneficial.

On returning from Ludlow castle to his father's

house, he found his old schoolmaster, Owen, dying of a consumption. At the request of Lord Newport, he took charge of the school till it should appear whether the master would die or recover. In about a quarter of a year, his death relieved Baxter from this office, and as he had determined to enter the ministry, he placed himself under Mr. Francis Garbet, then minister of Wroxeter, for further instruction in theology. With him he read logic about a month, but was seriously and long interrupted, by symptoms of that complaint which attended him to his grave. He was attacked by a violent cough, with spitting of blood, and other indications of consumption. The broken state of his health, the irregularity of his teacher, and his want of an university education, materially injured his learning and occasioned lasting regrets. He never acquired any great knowledge of the learned languages. Of Hebrew he scarcely knew anything; his acquaintance with Greek was not profound; and even in Latin, as his works show, he must be regarded by a scholar as little better than a barbarian. Of mathematics he knew nothing, and never had a taste for them. Of logic and metaphysics he was a devoted admirer, and to them he dedicated his labor and delight. Definitions and distinctions were in a manner his occupation; the *quod sit*, the *quid sit*, and *quotuplex — modes*, *consequences*, and *adjuncts*, were his vocabulary. He never thought he understood anything till he could anatomize it, and see the parts distinctly; and certainly very few have handled the knife more dexterously, or to so great an extent. His love of the niceties of metaphysical disquisition plunged him very early

into the study of controversial divinity. The schoolmen were the objects of his admiration. Aquinas, Scotus, Durandus, Ockham, and their disciples, were the teachers from whom he acquired no small portion of that acuteness for which he became so distinguished as a disputer, and of that logomachy by which most of his writings are deformed.

"Early education," says Mr. Orme, "exerts a prodigious power over the future pursuits and habits of the individual. Its imperfections or peculiarities will generally appear, if he attempt to make any figure in the literary or scientific world. The advantages of a university or academical education will never be despised, except by him who never enjoyed them, or who affects to be superior to their necessity. It cannot be denied, however, that some of our eminent men, in all departments and professions, never enjoyed these early advantages."

Among these was Richard Baxter. In answer to a letter of Anthony Wood, inquiring whether he was an Oxonian, he replied with dignified simplicity: "As to myself, my faults are no disgrace to any university, for I was of none; I have little but what I had out of books, and inconsiderable helps of country tutors. Weakness and pain helped me to study how to die: that set me on studying how to live; and that on studying the doctrine from which I must fetch my motives and comforts. Beginning with necessities, I proceeded by degrees, and now am going to see that for which I have lived and studied."

The defects of early education Baxter made up by greater ardor of application and energy of

purpose. He never attained the elegant refinements of classical literature, but in all the substantial attainments of sound learning he excelled most of his contemporaries. The regrets which he felt, at an early period, that his scholarship was not more eminent, he thus expresses:

"Thy methods cross my ways; my young desire
To academic glory did aspire.
Fain I'd have sat in such a nurse's lap,
Where I might long have had a sluggard's nap;
Or have been dandled on her reverend knees,
And known by honored titles and degrees;
And there have spent the flower of my days
In soaring in the air of human praise.
Yea, and I thought it needful to *thy* ends,
To make the prejudiced world my friends;
That so *my praise* might go before *thy grace*,
Preparing men thy messages to embrace;
Also my work and office to adorn,
And to avoid profane contempt and scorn.
But these were not thy thoughts; thou didst foresee
That such a course would not be best for me,
Thou mad'est me know that man's contempt and scorn,
Is such a cross as must be daily borne."

The principal scene of Baxter's pastoral labors was Kidderminister. Here he resided about fourteen years, and his labors were attended with remarkable success. "It was a great advantage to me," says Baxter, "that my neighbors were of such a trade as allowed them time to read or talk of holy things. For the town liveth upon the weaving of Kidderminster stuffs; and they stand in their looms, the men can set a book before them, or edify one another; whereas ploughmen,

and many others are so wearied, or continually employed, either in the labors or the cares of their callings, that it is a great impediment to their salvation. Freeholders and tradesmen are the strength of religion and civility in the land; and gentlemen and beggars, and servile tenants, are the strength of iniquity. Though among these sorts, there are some also that are good and just, as among the other there are many bad. And their constant converse and traffic with London, doth much promote civility and piety among tradesmen.

"Another furtherance of my work, was the books which I wrote and gave away among them. Of some small books I gave each family one, which came to about eight hundred; and of the larger, I gave fewer; and every family that was poor, and had not a Bible, I gave a Bible to. I had found myself the benefit of reading to be so great, that I could not but think it would be profitable to others.

"God made use of my practice of physic among them also as a very great advantage to my ministry; for they that cared not for their souls did love their lives, and care for their bodies; and by this, they were made almost as observant, as a tenant is of his landlord. Sometimes I could see before me in the church, a very considerable part of the congregation, whose lives God had made me a means to save, or to recover their health; and doing it for nothing, so obliged them that they would readily hear me. Another help to my success, was the small relief which my low estate enabled me to afford the poor; though the place was reckoned at near two hundred pounds

per annum, there came but ninety pounds, and sometimes but eighty pounds to me. Beside which, some years I had sixty, or eighty pounds a year of the booksellers for my books; which little dispersed among them, much reconciled them to the doctrine that I taught. I took the aptest of their children from the school, and sent divers of them to the universities; where for eight pounds a year, or ten, at most, by the help of my friends, I maintained them. Some of them are honest, able ministers, now cast out with their brethren; but, two or three having no other way to live, turned great conformists, and are preachers now. In giving the little I had, I did not enquire whether they were good or bad, if they asked relief; for the bad had souls and bodies that needed charity most. And this truth I will speak to the encouragement of the charitable, that what little money I have now by me, I got it almost all, I scarce know how, at that time when I gave most, and since I have had less opportunity of giving, I have had less increase.

"My public preaching met with an attentive, diligent auditory. Having broke over the brunt of the opposition of the rabble before the wars, I found them afterwards tractable and unprejudiced. Before I entered into the ministry, God blessed my private conference to the conversion of some, who remain firm and eminent in holiness to this day; but then, and in the beginning of my ministry, I was wont to number them as jewels; but since then I could not keep any number of them. The congregation was usually full, so that we were fain to build five galleries after my coming thither; the church itself being very capacious,

and the most commodious and convenient that ever I was in. Our private meetings, also, were full. On the Lord's days there was no disorder to be seen in the streets; but you might hear a hundred families singing psalms and repeating sermons as you passed through them. In a word, when I came thither first, there was about one family in a street that worshipped God and called on his name, and when I came away, there were some streets where there was not one poor family in the side that did not so; and that did not, by professing serious godliness, give us hopes of their sincerity. And in those families which were the worst, being inns and ale-houses, usually some persons in each house did seem to be religious. Though our administration of the Lord's supper was so ordered as displeased many, and the far greater part kept away, we had six hundred that were communicants; of whom there were not twelve that I had not good hopes of as to their sincerity."

In accounting for these signal and blessed effects of his ministry, his biographer remarks with great justice, that "Baxter never spoke like a man who was indifferent whether his audience felt what he said, or considered him in earnest on the subject. His eye, his action, his every word, were expressive of deep and impassioned earnestness, that his hearers might be saved. His was eloquence of the highest order; not the eloquence of nicely selected words, — or the felicitous combination of terms and phrases, — or the music of exquisitely balanced periods, (though these properties are frequently to be found in Baxter's discourses,) but the eloquence of the most important truths, vividly

apprehended, and energetically delivered. It was the eloquence of a soul burning with ardent devotion to God, and inspired with the deepest compassion for men, on whom the powers of the worlds of darkness and light, exercised their mighty influence; and spoke through his utterances, all that was tremendous in warning, and all that was delightful in invitation and love. The gaining of souls to Christ was the only object for which he lived. Hence, amidst the seeming variety of his pursuits and engagements, there was a perfect harmony of design. His ruling and controlling principle was the love of his Master, producing the desire of a full and faithful discharge of his duty, as his approved minister. This was the centre around which every thing moved, and by which every thing in his circumstances and character was attracted or repelled. This gave unity to all his plans, and constituted the moral force of all his actions.

Baxter died December 8, 1691. He left the world in joyful assurance of entering into the saint's everlasting rest. During his sickness, when the question was asked, How he did? his reply was, *Almost well.*

In reviewing the life of this extraordinary man, we see what powerful and numerous difficulties a resolute mind can overcome. Baxter, during his whole life, might be almost said to die daily. Hardly ever was such a mind connected with so frail an earthly lodging-place. He was the sport of medical treatment and experiment. At about fourteen years of age he was seized with the small-pox, and soon after, by improper exposure to the cold, he was affected by violent catarrh and cough.

This continued for about two years, and was followed by spitting of blood, and other phthisical symptoms. One physician prescribed one mode of cure, and another a different one; till, from first to last, he had the advice of no less than thirty-six professors of the healing art. He was diseased literally from head to feet; his stomach acidulous, violent rheumatic headaches, prodigious bleeding at the nose, his blood so thin and acrid that it oozed out from the points of his fingers, and often kept them raw and bloody. His physicans called it hypochondria. He himself considered it to be premature old age; so that at twenty he had the symptoms, in addition to disease, of fourscore. He was certainly one of the most diseased and afflicted men that ever reached the ordinary limits of human life. How, under such circumstances, he was capable of making the exertions which he almost incessantly made, appears not a little mysterious.

Baxter lived also in one of the most stormy periods of English history. Men were bound, and in "deaths oft," for conscience sake. For preaching the truth, as they honestly believed it be, no less than two thousand ministers were, on one occasion, ejected from their pulpits. Civil wars raged with fearful violence, and many were the men whose hands were imbrued in fraternal blood. Baxter was in all these tumultuous scenes; now in the army of the Protector, now showing his dexterity in logical warfare before councils and synods, now in prison, and now in his pulpit at Kidderminster. In short, he lived at the time of Selden, and Milton, and Hampden, and Pym, —at the time of the breaking up of the dark ages,

after old systems were overthrown, and when all was in confusion and uncertainty.

Notwithstanding all this, his labors were prodigious. The works of bishop Hall amount to ten volumes, octavo, Lightfoot's extend to thirteen, Jeremy Taylor's to fifteen, Dr. Goodwin's to twenty, Dr. Owen's to twenty-eight; while Richard Baxter's works, if printed in a uniform edition, could not be comprised in less than sixty volumes, making at least thirty-five thousand closely printed octavo pages. At the same time, his labors as a minister, and his engagements in the public business of his times, formed his chief employment for many years, so that he speaks of writing but as a kind of recreation from more severe duties. The subjects on which he wrote embrace the whole range of theology; in all the parts of which he seems to have been nearly equally at home. Doctrinal, practical, casuistical and polemical, all occupied his thoughts and engaged his pen.

"His inquiries ranged, and his writings extended from the profoundest and most abstruse speculation on the divine decrees, the constitution of man, and the origin of evil, to the simplest truths adapted to the infant mind. Baxter appears to have read every thing relating to his own profession, and to have remembered all which he read. The fathers and schoolmen, the doctors and reformers of all ages and countries, seem to have been as familiar to him as his native tongue. He rarely makes a parade of his knowledge, but he never fails to convince you that he was well acquainted with most which had been written on the subjects which he discusses."

ARTHUR YOUNG.

This celebrated agriculturist was a younger son of the Rev. Arthur Young, D. D., prebendary of Canterbury, and was born on the seventeenth of March, 1741, at Bradfield Hall, Suffolk, England. Dr. Young, not being able to provide very liberally for his younger children, designed Arthur for trade, and accordingly apprenticed him to a wine-merchant at Lynn, in Norfolk; but the lad having evinced an early attachment to agricultural pursuits, on his father's death, in 1761, returned home, and managed the farm at Bradfield, for the benefit of his widowed mother and her family. He left his maternal roof in 1767, having during his five years' farming kept a register of his experiments, which formed the basis of his "Course of Experimental Agriculture," published anonymously in 1770, and which was well received by practical farmers, though it was rather too highly colored.

On quitting home, he hired a farm in Essex, but after six months' trial he was obliged to relinquish it for want of funds. He at last fixed himself near North Minns, in Hertfordshire, where he continued for about nine years, repeating his experiments on lands not very favorable to them, and, like many other ingenious speculatists, losing his money nearly as often as he made the attempt. So warmly, however, was he attached to his favorite pursuits, that he determined to promote and recommend them by his pen, and before he

had completed his thirtieth year published several works for the improvement of agriculture, particularly his "Farmer's Letters," "Rural Economy," and "Tours through the Southern, Northern and Eastern parts of England," all of them replete with useful information. During his visit to the north of England, an opportunity was afforded him of rendering essential service to a most extraordinary self-taught agriculturist in humble life, a miner, at Swinton, named James Crofts, who, by the almost incredible devotion of twenty hours a day to hard labor, had, with his own hands, reclaimed ten acres of moor-land, on which he kept three milch cows, an heifer, and a galloway. To encourage such a rare instance of industry and application in the lower orders, Mr. Young set on foot a subscription for the benefit of this humble but most valuable member of society, the produce of which freed him from his subterranean employment, and enabled him to direct his attention exclusively to the improvement of waste lands, an occupation for which he had, under every possible disadvantage, evinced an extraordinary adaptation of untutored genius.

The tour of Mr. Young occupied six months; the information and incidents of which were collected and published in four octavo volumes. He soon after printed an "Essay on Swine," to which the gold medal of the Society for the Encouragement of Arts was awarded. In 1770, he gave to the world a very valuable treatise, called "The Farmer's Guide in hiring and stocking farms," and so indefatigably did he pursue his favorite object, that in the summer of 1770 he made a tour through the eastern counties of England, in con-

tinuance of his plan, imperfectly as he had then formed it, of an agricultural survey of England. The observations made during this journey were published in May, 1771, and it is no small proof of their author's industry, that they were printed as soon as in the course of the year 1770 (half of which, at least, was spent in travelling) and of the spring of 1771. In this short period he must have found time to print and publish his "Farmer's Guide," in two volumes, octavo, his "Eastern Tour," in four, "Rural Economy," in one, a second volume of the "Farmer's Letters," and a "Course of Experimental Agriculture," in two volumes, quarto, besides superintending through the press the second edition of his "Northern Tour," in four volumes, octavo. With so much to do in so short a space of time, what wonder that Mr. Young should not have performed everything which he undertook equally well? He wrote his books too fast, and was too prone to substitute speculations for facts.

After the death of his mother, he entered on the possession of the family estate, which he continued to cultivate during the remainder of his life. In addition to the works which have been named, he wrote a very sensible pamphlet on the expediency of a free exportation of corn, proposals to the Legislature for numbering the people, observations on the present state of the waste lands of the kingdom, an essay on the culture of cole-seed for feeding sheep and cattle, for which the gold medal of the Society for the encouragement of Arts was, for the second time, awarded him, and a political arithmetic. His reputation was soon widely spread abroad. By order of the

empress Catharine, his agricultural tours were translated into the Russian language. At the same time she sent several young Russians to the author to learn the system of English agriculture under his immediate superintendence. Prince Potemkin speedily sent two others, and his example was soon followed by the marquis de Lafayette.

Mr. Young's tour through Ireland, published in 1780, and which contains a mass of valuable facts and observations, is characterized by Maria Edgeworth "as the most faithful portrait of the inhabitants of Ireland, to whom it rendered essential service, by giving to other nations, and more especially to the English, a more correct notion than they had hitherto entertained of their character, customs and manners."

In 1784, this indefatigable writer commenced his "Annals of Agriculture," a periodical publication, continued monthly, until the close of his life, when it amounted to forty-five octavo volumes, forming a rich collection of facts, essays and communications on every question of agriculture and political economy. For a long time, however, this work was more laborious than successful, doing little if anything beyond paying its expenses, and averaging, when the fifteenth volume was completed, a sale of only three hundred and fifty copies of each number. This want of patronage, the disadvantage of a provincial press, misunderstandings with one publisher, the failure of another, £350 in the editor's debt, and a variety of untoward accidents, not unfrequently falling to the lot of authors and editors, considerably damped Mr. Young's expectations from a work to

which he had looked for posthumous reputation. But that reputation was not so long delayed; and with it the sale of his work and consequently its profits gradually increased. For the information contained in this truly valuable miscellany, he had the honor of receiving the approbation and personal thanks of George III. when he one day met Mr. Young on the terrace at Windsor. So deep an interest did the venerable monarch take in the success of a work, of whose merit no one was more competent to judge, that he shortly after sent its editor some communications in the form of letters, which were inserted in the annals under the signature of Ralph Robinson.

In 1787, 1788, and 1789, Mr. Young performed three tours in France, and published the result of his observations in two quarto volumes, which were favorably received. As a proof of his energy, it is stated that he performed his second journey on the back of a horse wall-eyed and well nigh blind, without surtout or saddlebags, and met, as might be expected from such an equipment for a three months' trip, with several adventures not unworthy the knight-errantry of Hudibras or Don Quixote to perform, or the genius of Cervantes or Butler to celebrate.

On the formation of the Agricultural Board, Mr. Young became its secretary, and performed the duties of his office till his death with great zeal and fidelity. He continued from time to time to survey several of the counties of England, of which surveys he published detailed reports. To his very last days his attachment to his early pursuits continued; and at the time of his death he was preparing for the press the result of his

agricultural experiments and observations during a period of fifty years.

Mr. Young was a man of strong understanding, of a vigorous mind, and of warm feelings; a most diligent student, yet disposed to think for himself. He was extremely temperate in his habits, ardent and indefatigable in his pursuits, and diligent and laborious in a degree seldom equalled. Through the whole course of his life he was a very early riser, and continued this practice even after blindness made him dependent on others for the prosecution of his studies. His firmness was great; but to a man of sanguine disposition, the continual obstruction to his pursuits produced by a want of sight, (a calamity which afflicted him after 1811 till his death,) could scarcely have been borne with patience, had it not been for the influences of religion, whose benign operation was never more triumphantly displayed.

A most important change in his principles and character took place in the year 1797, when the death of his youngest daughter, to whom he had been most tenderly attached, first led him to apply to that only true source of consolation over which the world has no power. During the former fifty-six years of his life, while most subjects of importance had, at one time or other engaged his attention, the most important of all, religion, had scarcely occupied a thought. He was not indeed an avowed skeptic, but his mind was so uninstructed and his heart so unconcerned in all that respected religion, that, as he used often afterwards to declare and deeply to lament, he was little better than a heathen. The diligence with which he thenceforth discharged his official duties,

prosecuted his studies, and continued his favorite pursuits, was however in no degree abated, but the motive was wholly changed. He was now actuated by a desire to please God, and by a wish in his fear to do good to men. A very large proportion of his property was devoted to the relief of the distressed; the poor peasantry around his estate ever looked up to him as a father and a friend. To enable him to give more to the poor, he lived with simplicity and moderation, without ostentation, though with much hospitality: no man having a warmer heart towards his friends or giving them a kindlier welcome at his cheerful board. His early opposition to the slave-trade evinced that he was a friend to the whole brotherhood of man. He died on the twentieth of February, 1820. The disease which terminated his mortal existence was an extremely painful one; but, in the most excruciating bodily agony, his patience and resignation were exemplarily manifested.

CHARLES G. HAINES.

Charles G. Haines was born at Canterbury, in the State of New Hampshire, about the year 1793. His father was a respectable farmer, in humble circumstances, but endowed with a vigorous mind. His energetic habits of thought doubtless exerted great influence on the mind of his son, by calling its powers into activity at an early age, and thus, in some measure, compensated for the absence of those opportunities of education, which the limited means of the family put beyond their reach. Charles passed the years of his boyhood in his father's house, laboring on the farm in the summer, and attending the village school in the winter. It is probable that this mode of life did not please him, and that a restless spirit induced him to seek some other employment of a less humble character. About the age of fourteen years, he obtained the situation of a clerk in the office of Col. Philip Carrigain, at that time secretary of the State of New Hampshire. While a mere copyist in the office of this gentleman, his desire to be distinguished in every occupation in which he was engaged, showed itself in the acquisition of a beautiful handwriting — an attainment upon which no intelligent man will place a low estimate. On the appointment of Col. Carrigain to prepare a map of the State, and his consequent resignation of his office of secretary, young Haines, partly by his own

exertions, and partly by the assistance of his friends, prepared himself for college, and was admitted to the institution in Middlebury, Vermont, in 1812. He passed through the usual course with credit, and in 1816, received the degree of Bachelor of Arts. In consequence of unremitted application, his health had become feeble, and he was induced to undertake a journey on horseback. On this occasion, he first visited the city of New York. He continued his journey as far as Pittsburgh, in Pennsylvania. He returned to Vermont, in much better health, and commenced the study of law in the office of the Hon. Horatio Seymour, of Middlebury. He also engaged in the task of assisting in the editorship of one of the principal political journals of the State, probably from want of other means of subsistence. In 1818, Mr. Haines removed to the city of New York, and entered the law office of Pierre C. Van Wyck, Esq. He soon took an active part in the local politics of the State, and was appointed private secretary to Governor Clinton. Yet so great was his address, or so happy his disposition, that he was beloved by all parties for his generous feelings and polite deportment. During the first year of his residence in New York, Mr. Haines produced a pamphlet, in which he took an elaborate review of the probable expense and advantages of the great western canal. Soon after he produced a larger work on the same subject, in which he displays great research and industry. After this he secluded himself almost entirely from society, and applied himself closely to professional studies. Few men labor more assiduously than Mr. Haines did for

three years after his admission to the bar, and until attacked by the disease which proved fatal to him. Besides attending to his business as a lawyer, he uniformly devoted three hours in a day to reading law, and spent his nights, till a very late hour, in the study of history and political science. It was his habit to make copious abstracts of the books which he read, to which he added numerous notes of his own. He was not an exact, practical lawyer. While he was familiar with the general doctrines of the law, he devoted his earnest attention to questions involving the principles of our federal and state constitutions. It was therefore in the courts of the United States, where all the important doctrines regarding our national compact are agitated and determined, that Mr. Haines desired to appear. His studies had a constant tendency to this object. Among his manuscripts, there is a minute analysis of the "Federalist," besides several volumes filled with quotations, and occasionally with complete abstracts of works on kindred subjects. The first question in which he was concerned before the Supreme Court of the United States, was one involving the constitutionality of the state bankrupt laws. On its decision depended the fortune of thousands of individuals, and the title to millions of property. Mr. Henry Clay and Mr. David B. Ogden, were his senior counsel, and Mr. Webster and Mr. Wheaton were the opposing counsel. The impression made by Haines on his learned auditors was favorable. The argument for the constitutionality of the State bankrupt laws was the fruit of long and laborious preparation. It was afterwards printed,

and does great credit to his industry, learning, and good sense. His legal talents were never fully tested. His early education had been hurried and deficient. His powers of thought had never been tasked by rigorous trains of mathematical and metaphysical reasoning. His mind had never been disciplined to that severity and exactness of thought, which go to form a truly able lawyer. Yet his mental processes were just, rapid, and vigorous, and even when competing with men of the highest legal attainments, his previous diligent preparation, made him always respectable. Mr. Haines was frequently called upon to address public assemblies upon various topics which for the moment interested the community. He freely lent his aid to the various institutions of charity and reform, giving to them liberally his time, his money, and his labor. In general, he wrote out the substance of his intended speech at length. As the views which he took of his subject were large, his efforts of this kind never disappointed public expectation, and were frequently honorable to his talents, as well as to his good feelings. Among the topics of this nature, on which he wrote and spoke with effect, were "Pauperism," and the "Penitentiary system." His useful exertions for the cause of humanity in relation to these subjects will long be remembered with gratitude.

In the political struggles of the State, Mr. Haines was very active. In 1825, Governor Clinton nominated him adjutant general of the militia of the State, an office which he did not live to assume. The labors, in which he was engaged, were too severe for his physical strength.

Intense study and continued sedentary habits were gradually making fatal inroads upon a constitution originally good, and which had been sustained thus far by a life of the strictest temperance. His friends often warned him against the effects of midnight study and neglect of exercise, but he used to reply that he did not require any relaxation. Their fears were too soon realized. He lingered till the third of July, 1825, when he expired at the age of thirty-two years. His funeral took place on the sixth of July, and was attended by an immense concourse of citizens.

"His devotion to politics," remarks his biographer, "was almost a passion, and if talent may be estimated by success, he was well adapted for political life. Certain it is, that he seized with uncommon tact upon those circumstances which industry and zeal could render favorable; and, as he conciliated every man whom he approached, he accomplished as much by his personal influence, as by his writings. There was, besides, in him an enthusiasm, which believed nothing impossible; and to such an one, obstacles are toys, and victory a pastime. More than all, and united with all, he possessed an indefatigable systematic industry, the great secret of all acquisitions. Those who have the originality to conceive great designs, are not found, in general, to possess the practical talent of developing their utility, and carrying them into execution. Mr. Haines had the sagacity to seize on the best conceptions of other men, the diligence to gather important facts and circumstances in their support, and the activity and energy to turn them to practical account."

Mr. Haines is a remarkable instance of what the unaided efforts of one man may accomplish. He came to the city of New York, a poor and friendless stranger, and in the short space of seven years, he surrounded himself with numerous and valuable friends, acquired considerable reputation as a scholar, a politician, and a writer, and rose to one of the highest offices in the gift of the State government. His social and private character was exemplary, though his constitutional ardor sometimes triumphed over his judgment.

CARSTEN NIEBUHR.

Carsten Nieburh was born on the 17th of March, 1733, in Hadeln, then belonging to the province of Friesland, Denmark, but since united with the kingdom of Hanover, Germany. He lost his mother before he was six weeks old. He grew up under the care of a step-mother in his father's house, where his way of life and employments, as well as his education, were those common to the peasant boys of his country. It was, probably owing to his own eager desire for knowledge that his father was induced, only with a view of his being somewhat better instructed than a common peasant, to send him to the grammar school in Otterndorf, whence he afterwards went to that at Altenbruch. But the removal of the schoolmaster of the place, and the prejudices of the guardians, (for his father had died in the interval,) put an end to his school-studies before he had gone far enough to have them sufficiently impressed on his memory, to be of any service to him, when he afterwards resumed them. The division of his father's property between the surviving children had left him, instead of the farm which had been so long the hereditary possession of the family, only a very small capital, quite inadequate to the purchase of any land for himself; and necessity would have led him to acquire knowledge, as a means of subsistence, even if he had been of a character to endure to live without

education, and without employment. He was obliged, however, to content himself with such accomplishments as were attainable without school-learning; he, therefore, for a year, pursued music with great zeal, and learned to play on several instruments with a view to earn his living as an organist. As this employment, likewise, did not meet the approbotion of his guardians, his maternal uncle took him home to his own house, where he passed about four years, during which his life was once more that of a peasant. The older he grew, however, the less could he endure the void and dulness of this way of life, which can only be relieved, either, as in old times, by a share in the general deliberation on the affairs of the community, and by cheerfulness and merriment, or, as is the case with the English farmer, by a participation in the advantages of education and literary amusement. He felt an irresistible impulse to learn, to employ himself, and to render himself generally useful.

The providential circumstances which determine the course of life of distinguished men, deserve to be remembered. In the highest degree providential was that which gave to Niebuhr the direction which he thenceforth followed, until it led him to become one of the most eminent travellers of modern times. A law suit had arisen concerning the superficial contents of a farm, which could only be decided by measurement, and as there was no land surveyor in Hadeln, the parties were obliged to send for one to another place. Niebuhr felt for the honor of his native district with all the warmth of old times, and this occurrence appeared to him disgraceful to it. He

could now fulfil a duty towards his country by learning the neglected art, which at the same time furnished him with an occupation and an object such as he desired. Learning that instruction in practical geometry was to be had in Bremen, he immediately, on arriving at age, repaired to that city. This plan was frustrated; the teacher upon whom he depended was dead; but he did not disdain the instruction of a humble practitioner of the art. He, however, would be obliged to lodge and board in his house, and here the bashful, strictly decorous, and self-distrusting young peasant, found two town-bred young ladies, sisters of his intended teacher, whose attentions appeared to him so singular that he quickly took his departure. He now turned his eyes towards Hamburgh, but there he was destined again to experience disappointment, and to have his perseverance put to the test.

He had passed his two and twentieth year when he went to Hamburg to avail himself of Succow's instructions in mathematics, and, without any false shame on account of his age, to begin his school-studies anew, his income was not sufficient to maintain him even with that rigid economy which was natural to him. He determined, however, to spend just so much of his small capital as would enable him to accomplish his end. He arrived at Hamburgh in the summer of the year, 1755. But just at this time, Succow was called to Jena; the mathematical chair was not filled till Büsch was appointed to it. The severest application to private instruction was, therefore, necessary to make the lessons at the gymnasium (or public school) intelligible or profitable to him. A

countryman of his, named Witke, who, at that time, lived at Hamburgh as candidate for holy orders, and who afterwards died at Otterndorf, where he was pastor, gave him this private instruction with true cordiality and friendship. Niebuhr always spoke of him as the person who laid the foundation of his education, and, as such, honored and loved him with sincere affection. Notwithstanding his uncommon exertions, and the strength of his body and mind, twenty months (eight of which were passed in nearly preparatory studies, for the Latin tongue was almost entirely unknown to him) were quite insufficient for one, who began to learn so late in life, to acquire that amount of knowledge which more favored youths bring with them to the university. Among other things thus unavoidably neglected was Greek, of which he always lamented the want. Under Büsch he had begun to learn mathematics. He was the earliest and most distinguished of all his pupils, and in subsequent life, became his most intimate friend. To stop in the middle of any undertaking was thoroughly repugnant to his whole character. He had gone to Hamburgh solely with a view to acquire a knowledge of geometry, and of some things commonly taught in the schools; but as soon as he had become acquainted with the sciences, he could not rest till he was able to embrace them in all their extent and depth. In the spring of 1757, he repaired to Göttingen. The mathematics continued to be his favorite study. He was now more than ever compelled, by the diminution of his little substance, to aim at some employment by which he could maintain himself, and to which his studies

would lead. This he now looked to in the Hanoverian engineer corps, in which (as was the case in nearly the whole military service of Germany) men of efficient mathematical attainments were extremely rare. There he might hope to obtain by merit a competent support. He studied with the steadiness which a fixed, simple, and prudent plan of life ensures, from the spring of 1757 for more than a year, undisturbed by the war which frequently raged around Göttingen. At this time he recollected that an endowment, or fund for exhibitions, existed at this university, and begged his friend to ascertain whether it was only for poor students in the strict sense of the term, or whether it was endowed without that limitation, "as a means of persevering in the study of something useful and important. In this case alone could he allow himself to apply for it." He received it and appropriated it entirely to the purchase of instruments.

At this period Frederick the Fifth reigned in Denmark in enviable tranquility. Louis the Fourteenth's memory still shone throughout Europe, with all that false glitter which had hung around his name during his life, and he was well known to be the model after which the ministers of the Danish monarch endeavored, as far as it was compatible with the character of a peaceful king, to form their sovereign. Seldom, however, have the aims of ministers been less liable to reproach than were those of the then baron J. H. E. Bernstorf; and among all the statesmen of the continent, there was not, perhaps, one of his time so well informed, so noble minded, and so intelligent. The extraordinary and beneficent

qualities and endowments of the second count Bernstorf will be remembered by a grateful nation, since what he effected remains indestructible, and forms the sole basis for future reforms and improvements. Posterity will perhaps mention, as among the noblest actions of his uncle, J. H. E. Bernstorf, the emancipation of his serfs, or the slaves of the soil; the leisure which he insured to Klopstock, and the scientific expedition which he sent into Arabia. This enterprise was originally owing to Michaelis, who had represented to the minister of state that many elucidations of the Old Testament might be obtained by personal observation and inquiry in Arabia, which might be regarded as hitherto untrodden by European feet. The original idea in the mind of the author extended no farther than this; that a single traveller, an oriental scholar out of his own school, should be sent by way of India to Yemen; a plan which would then have caused the undertaking to end in nothing, even supposing the traveller ever to have found his way back. Happily Bernstorf immediately perceived the defectiveness of the plan, and replied to it by a proposal to render the mission far more extensive in objects and outfit. As Bernstorf took up the project with all the vivacity and liberality for which he was so remarkable, and fully empowered Michaelis to propose an oriental scholar to him, it might have been expected that Michaelis would have named the man who, among all his contemporaries, was unrivalled for his knowledge of the Arabic language, and, as all Germany knew, was fighting inch by inch with starvation, — Reiske, — whom, moreover, Michaelis had known from

the time he was at school. But instead of Reiske, he recommmended a pupil of his own, Von Haven, whose acquirements must, at that time, have been those of a mere school-boy, since a two years' residence at Rome, (whither he went to prepare himself under the Maronites,) and even the journey itself, never raised him above the meanest mediocrity. Michaelis was also commissioned by Bernstorf to propose the mathematicians and natural historians. For the choice of these men, Michaelis applied to Kästner, one of the Göttingen Society of Sciences, of which he was then director. A student of Hanover, Bölzing, at first accepted the proposal, but after a short time withdrew his promise. Kästner next proposed Niebuhr. One day in the summer of 1758, on his way from a meeting of the Society, to which he had just proposed Niebuhr, he walked into his room. "Have you a mind to go to Arabia?" said he. "Why not, if any body will pay my expenses," answered Niebuhr, whom nothing bound to his home, and who had an unbounded desire for seeing the world. "The King of Denmark," replied Kästner, "will pay your expenses." He then explained the project and its origin. Niebuhr's resolution was taken in a moment, so far as his own inclination was concerned. But as he thought very humbly of himself, and most reverentially of science and of the truly instructed, he despaired of his own ability and power of being useful. On this head, however, Kästner set him at ease by the promise of a long term of preparation, which he might employ chiefly under Mayer, in astronomy, and by the assurance that, with his determined industry and perseverance, the allotted

time would be fully sufficient. The same evening Niebuhr, who wanted nothing to fix his resolution but Mayer's promise to instruct him in astronomy, called on the philosopher. Mayer, who was not so sanguine a man as Kästner, cautioned him against a determination which, with his character, would be irrevocable, while he knew not the dangers and fatigues which he was about to brave. He, however, promised the desired instruction. Michaelis, whom he visited the following day, probably saw that there was levity and precipitation in so prompt a resolution, and pressed upon him to delay a week to reconsider the matter. It passed, but Niebuhr did not trouble himself with any further deliberation on a subject upon which his mind was already thoroughly resolved, and Michaelis now regarded the engagement as definitively accepted. His conditions were a year and a half for preparation; and during this period, the same salary as Von Haven received. Bernstorf assented to this arrangement without the slightest hesitation. Niebuhr now lived solely for his object. He pursued his studies in pure mathematics, perfected himself in drawing, and sought to acquire such historical information as was attainable with that degree of learning which he had so lately and so imperfectly acquired, without neglecting his more immediate objects. He cultivated practical mechanics, with a view of acquiring greater dexterity in handling his instruments, and in various manual operations, the acquirement and practice of which in Europe, except for those whose business they are, is but a waste of time. His attention was, however, principally occupied by the private lessons of Mich-

aelis in the Arabic language, and of Mayer in astronomy. These he remembered with very different feelings. For the grammatical study of languages in general he had but little talent or inclination. At the end of a few months he gave up this course of instruction.

Tobias Mayer was undoubtedly one of the first astronomors and mathematicians of his time. The results of his labors consist principally of a catalogue of 992 stars, and his famous lunar and solar tables. His valuable theory of the moon, and the laborious calculation of these tables, together with the invention of Hadley's quadrant, in 1731, enabled Maskelyne to bring into general use the method of discovering the longitude by observing the distance of the moon from the sun, and certain fixed stars, called the lunar method. Mayer's zeal for teaching his pupil was as great as Niebuhr's for learning of him. Among all the men of whom he became acquainted in the course of his long life, there was none whom he so loved and honored as Mayer; and the most intimate friendship subsisted between them. He retained an ardent attachment to Mayer's memory up to the most advanced age, and he hardly ever received from Providence any greater gratification than that of hearing that his first lunar observations reached his beloved teacher on his death-bed, before consciousness had left him, and had cheered and animated his last moments; and that these observations had decided the giving the English premium, offered for the discovery of the longitude, to the widow of the man to whom he felt that he was indebted for his acquirements in this branch of science. Mayer, on his part, had no

more earnest solicitude than to educate a pupil who would apply his method of determining the longitude, and his, at that time, unprinted lunar tables, of which Niebuhr made a copy. Mayer interested himself in the outfit of Niebuhr's journey, so entirely as if it had been his own personal affair, that he divided his quadrants with his own hands. The accuracy of this labor of friendship was proved by the observations which were made with it. About the time of commencing his journey, Niebuhr was appointed lieutenant of engineers; a circumstance which only deserves notice for the sake of a letter which places his modesty and judgment in the most amiable light. "He was," as he wrote to a friend, "led to think of a title for himself, by Von Haven's appointment to a professorship in the university of Copenhagen. A similar one had been offered to him, but he held himself unworthy of it. The one which he had received appeared to him more suitable. He might have had that of captain, if he had asked for it; but that, for a young man, would have been too much. As a lieutenant, it would be highly creditable to him to make valuable observations; but as professor, he should feel it disgraceful not to have sufficiently explored the depths of mathematical science." He had at that time no other plan than that of living in his native country, after the accomplishment of his mission, on the pension which was assigned to him.

The party consisted of Von Haven, already mentioned; Forskaal, in many respects, eminently qualified for the undertaking; Cramer, a physician, a most unfortunate choice; Bauernfeind, a draughtsman, a respectable artist, but intemper-

ate; and Niebuhr. On the 10th of March, 1761, the travellers left the Elsineur roads for the Mediterranean. The voyage was a pleasant one to Niebuhr. He endeavored to make himself acquainted with the construction of the ship, and he exercised himself daily in nautical and astronomical observations, which procured him the satisfaction of being regarded by the officers as an active and useful member of their company. Mayer, in the instructions which he gave to Niebuhr, had constantly kept in view that his pupil would be placed in situations in which it would be absolutely necessary for him to be able to rely upon himself, and where he could not hope for the slightest assistance or support. He had taught him entirely himself, and encouraged him with the assurance that an active and clear-sighted man is generally able to discover means to overcome the obstacles which may oppose him. His method of teaching, which was entirely practical, was chiefly this: he first described to his pupil the object of the observation and the method of using the instruments; he then left him without any assistance, to try how far he could proceed in his observation and calculation, and desired him to tell him when he came to any insurmountable difficulty. He was obliged to describe exactly how far he had gone on well, and where his progress had been stopped, and then Mayer assisted him.

A stay of some weeks at Marseilles, and of a shorter time at Malta, procured a very agreeable recreation to the party. The scientific enterprize was known throughout Europe, and we should find it difficult now to picture to ourselves the

universal interest in its success which ensured to the travellers the most cordial reception and the most respectful attentions. It was an enterprize consonant with the spirit of the times, and in no manner solitary or strange. Asia was become an object of interest to Europeans from the war which the two great maritime powers were then waging in India. England began to send out ships to circumnavigate the globe. It was just that period of general satisfaction and delight in science and literature in which mankind believed that they had found the road that must inevitably lead to rapid advances in knowledge and improvements; men of letters enjoyed great consideration; and the interest of science and its followers were generally regarded as among the most important in which mankind could be engaged.

From Malta the expedition proceeded to the Dardanelles. In the Archipelago, Niebuhr was attacked with the dysentery, and was near dying. He recovered his health at Constantinople, but so slowly that at the expiration of two months from the beginning of his illness he had scarcely made sufficient progress to go on board a vessel bound for Alexandria without manifest danger. In Egypt, the party remained a whole year, in which time Niebuhr, in company with Von Haven and Forskaal, visited Mount Sinai. During their stay in Egypt, Niebuhr determined the longitude of Alexandria, Kheira, Raschid, and Damietta, by means of numerous lunar observations, with an accuracy which the astronomers of Bonaparte's expedition, to their great surprise, found fully equal to their own. The following is the description of the outfit of himself and his companions

for their expedition to Mount Sinai. "We had made careful provision for every thing which we thought necessary for the journey before us. We had abundance of eatables, a tent, and beds. Most of the utensils carried on expeditions in these countries, have been described and drawn by other travellers; and indeed some of them are so convenient, that they might be introduced into European armies with signal advantage. Our little kitchen apparatus was of copper, well tinned inside and outside. Our butter we carried in a sort of pitcher, made of thick leather. Table cloths we did not want. A large round piece of leather was our table. This had iron rings attached to its edge, through which a cord was passed. After dinner it was drawn up, slung over a camel, and thus served the double office of a table and a bag. Our coffee cups (saucers we had none) were carried in a wooden box covered with leather, and wax candles in a similar box, enclosed in a leathern bag. In the lid of this box was a tube, which was our candlestick. Salt, pepper, and spice, we also kept in a little wooden box, with several lids screwed one over another. Instead of glasses we had little copper cups, beautifully tinned within and without. Our lanterns were of linen, and could be folded together like the little paper lanterns which children make in Europe, only that ours had covers and bottoms of iron. Each of us was furnished with a water pitcher of thick leather, out of which we drank; and as we sometimes found no water for two or three days, we carried a good many goat skins filled with it. We also took two large stone water jars with us, that we might be able to

carry water ourselves on the journey from Suez to Djidda. Our wine we kept in large glass flasks, each holding twenty of our bottles. These vessels appeared to us the best for the purpose; but when a camel falls, or runs against another with his load, they easily break, and therefore goat skins are better for the purpose. The hides which are used to contain water, have the hair on the outside; but those for wine have it on the inside, and are so well pitched, that the liquor acquires no bad taste."

In this journey, Niebuhr made astronomical and geographical observations as often as possible. Out of these laborious investigations grew the chart of the Red sea, which, considering the circumstances under which it was made, was a masterly work. Von Haven died about the end of May, 1763. Niebuhr was again attacked by dysentery, and was saved only by the greatest care and temperance. The climate and numerous annoyances which Forskaal had partly brought upon himself, and partly aggravated through his caprice, brought on a bilious disorder, of which he died at Jerim, on the 11th of July, 1763. Mokha, situated in the arid desert of Tehama, is, during summer, a horrible residence, and but few days elapsed before the surviving travellers and their servant were attacked with the fever of the climate. Bauernfeind and the servant died at sea. Cramer reached Bombay, languished for some months, and died. *Niebhur was saved by that extreme abstemiousness which renders a tropical climate as little dangerous to the Europeans as to natives.* While he was laboring under the dysentery, the physcian had told him to abstain from

meat, and to eat nothing but bread and a sort of rice soup. This regimen cured his illness. At the end of several weeks, the physician learned with astonishment, that Niebuhr was patiently continuing a diet by means of which few Europeans could be induced to purchase their lives, even when laboring under dangerous illness. The reception which Niebuhr met with from the English at Bombay, was extremly cordial. In Egypt he had first learned to delight in the society of Englishmen; and there was laid the foundation for that mutual attachment which ever after continued uninterrupted. There he learned the English language. He also made a copy of his journal, and sent it through London to Denmark. After a stay of fourteen months he left Bombay, visited Mascat, and made himself acquainted with the state of the remarkable province of Oman. He then proceeded to Shiraz and Persepolis. The last night of his journey to Persepolis was perfectly sleepless. The picture of these ruins remained during his whole life indelibly engraven on his mind. They appeared to him the crown and glory of all which he had seen. He passed between three and four weeks amidst them in the desert, in unremitting labor, measuring and drawing the fragments. From Shiraz he crossed the Persian gulf to Bassora. In Persia he collected historical documents concerning the fate of this unfortunate country, from the death of Nadir Shah up to his own times. From Bassora he proceeded through Bagdad and Mosul to Haleb. He was now perfectly at home; since he had been alone, he had been at liberty to conform, without molestation, to oriental manners and customs.

He was also in as good health as at any period of his life. An opportunity of going to Jaffa tempted him to visit Palestine. After that, he explored Lesser Asia, and reached Constantinople, on the 20th of February, 1767. After having spent five months in that city, he passed over Turkey in Europe to Poland, and in November reached Copenhagen. He was received by the court, by the ministers, and by the men of science, with the greatest distinction. Bernstorf, particularly, loaded him with marks of his esteem. The whole expense of the expedition was but £3,780 sterling. It would necessarily have been much greater had not Niebuhr been the sole survivor for nearly the whole of the last four years; but although the sources of expense were thus greatly diminished, they were still more so by his scrupulous integrity; not only in avoiding every outlay not essential to the object, but in paying out of his private pocket for every thing which could be regarded as a personal expense. He was now employed for some time in arranging his materials and preparing his journal for publication. He met in this undertaking with almost innumerable difficulties, owing to his want of an early literary education, to his extreme modesty, to the removal of his patron, Count Bernstorf, and to the unprovoked hostility of some of the literati of the country. In 1773, he was married to a daughter of the physician, Blumenberg. They had two children, a daughter, and B. G. Niebuhr, the illustrious author of the most learned and valuable history of Rome which has been written.

Niebuhr soon took up his abode at Meldorf, having had the office of secretary of the district

given to him by the government. A great part of his time was employed on his farm. He also found great satisfaction in the company of Boie, the governor of the district. Meanwhile, his children grew to an age to require instruction. This he gave them himself. "He instructed both of us," says his son, "in geography, and related to us many passages of history. He taught me English and French; better, at any rate, than they would have been taught by any one else in such a place; and something of mathematics, in which he would have proceeded much farther, had not want of zeal and desire in me unfortunately destroyed all his pleasure in the occupation. One thing was indeed characteristic of his whole system of teaching; as he had no idea how any one could have knowledge of any kind placed before him, and not seize it with the greatest delight and avidity, and hold to it with the steadiest perseverance, he became disinclined to teach, whenever we appeared inattentive or reluctant to learn. As the first instructions I received in Latin, before I had the happiness to become a scholar of the learned and excellent Jäger, were very defective, he helped me, and read with me Cæsar's Commentaries. Here, again, the peculiar bent of his mind showed itself; he always called my attention much more strongly to the geography than to the history. The map of ancient Gaul by D' Anville, for whom he had the greatest reverence, always lay before us. I was obliged to look out every place as it occurred, and to tell its exact situation. His instruction had no pretension to be grammatical; — his knowledge of the language so far as it went, was gained entirely by reading, and by

looking at it as a whole. He was of opinion that a man did not deserve to learn what he had not principally worked out for himself; and that a teacher should be only a helper to assist the pupil out of otherwise inexplicable difficulties. From these causes his attempts to teach me Arabic, when he had already not that facility in speaking it without which it was impossible to dispense with grammatical instruction, to his disappointment and my shame, did not succeed. When I afterwards taught it myself, and sent him translations from it, he was greatly delighted. I have the most lively recollections of many descriptions of the structure of the universe, and accounts of eastern countries, which he used to tell me, instead of fairy tales, when he took me on his knee before I went to bed. I recollect too, that on the Christmas eve of my tenth year, by way of making the day one of peculiar solemnity and rejoicing to me, he went to a beautiful chest containing his manuscripts, which was regarded by us children, and indeed by the whole household, as a sort of ark of the covenant, took out the papers relating to Africa, and read to me from them. He had taught me to draw maps, and with his encouragement and assistance I soon produced maps of Habbesh and Sudan. I could not make him a more welcome birth-day present, than a sketch of the geography of eastern countries, or translations from voyages and travels, executed as might be expected from a child. He had originally no stronger desire than that I might be his successor as a traveller in the East. But the influence of a very tender and anxious mother, upon my physical training and constitution, thwarted his plan

almost as soon as it was formed. In consequence of her opposition, my father afterwards gave up all thoughts of it."

Niebuhr had the satisfaction to find that his merits as a traveller were more and more appreciated. His works were very popular in England. The crown prince of Denmark also showed him distinguished favor. In 1802, he was appointed foreign member of the French National Institute. In his various labors he was indefatigable. In his 71st and 72d years, he toiled through a great part of the night. Nor did his indefatigable zeal relax even when his eyes began to fail. The consequences of this night-work were irremediable and fatal. In a short time he could no longer see to read, and for writing he required an extraordinary quantity of light, and even then the lines were often intermingled. His wife, after many years of suffering, died in 1807. His daughter, and the widowed sister of his wife, who had lived with the family for twelve years, could now devote themselves wholly to render him the assistance of which he stood in so much need. Every thing was read aloud to him. The conversation of Gloyer, his successor as secretary of the district, revived to his mind's eye many a faded or vanished picture of the East, and the books which this invaluable friend read aloud to him, and the circumstances, which he related, put him in possession of the works and statements of more recent travellers. This was without comparison one of his highest enjoyments. "When I related to him," says his son, "the descriptions of any traveller newly returned from the East, or gave him in my letters any accounts of travels

not known on the continent, his whole being seemed reanimated, and he dictated answers, which showed that his mental vision was vivid and powerful as ever. It was still more remarkable that these new facts imprinted themselves on his mind with all the depth and sharpness with which objects are stamped on a youthful memory, and so remained up to the time of his death. He combined them with what he had himself observed and experienced.

"In the autumn of 1814," continues his son, "his appearance was calculated to leave a delightful picture in the mind. All his features, as well as his extinguished eyes, were the expression of the extreme and exhausted old age of an extraordinarily robust nature; — it was impossible to behold a more venerable sight. So venerable was it, that a Cossack who entered, an unbidden guest, into the chamber where he sat with his silver locks uncovered, was so struck with it, that he manifested the greatest reverence for him, and a sincere and cordial interest for the whole household. His sweetness of temper was unalterable, though he often expressed his desire to go to his final home, since all which he had desired to live for had been accomplished. A numerous, and as yet unbroken family circle was assembled around him, and every day in which he was not assailed by some peculiar indisposition, he conversed with cheerfulness and cordial enjoyment on the happy change which had taken place in public affairs. We found it very delightful to engage him in continued recitals of his travels, which he now related with peculiar fulness and vivacity. In this manner he spoke once, and in great detail, of

Persepolis, and described the walls on which he had found the inscriptions and bas-reliefs, exactly as one would describe those of a building visited within a few days and familiarly known. We could not conceal our astonishment. He replied, that as he lay in bed, all visible objects shut out, the pictures of what he had beheld in the East continually floated before his mind's eye, so that it was no wonder he could speak of them as if he had seen them yesterday. With like vividness was the deep intense sky of Asia, with its brilliant and twinkling host of stars which he had so often gazed at by night, or its lofty vault of blue by day, reflected, in the hours of stillness and darkness, on his inmost soul; and this was his greatest enjoyment."

Towards evening, on the 26th of April, 1815, some one read to him as usual, while he asked questions which showed perfect apprehension and intelligence. He then sunk into a slumber and departed without a struggle. A concourse of people from all parts of the country attended his body to the grave. The funeral was solemnized with all the honors which respect and affection can pay. He had attained the age of eighty-two. He was extremely frugal. Economy had become a habit with him in early life. As a peasant lad he drank nothing but water and milk; and at a later period he deviated from this simple diet, only in compliance with the custom of others, with which he every where made it a rule to conform, and he then drank an extremely small quantity of wine. He had no favorite dishes but the peasant fare of his native land. "At the highest point of elevation," says his biographer, "to

which he attained, favored by his prince, respected and admired by the learned and eminent of all countries, it was his pride that he was born a peasant of Free Friesland. His manners never lost the simplicity, nor his morals the purity of that singular and estimable class of men. If ever there lived a man who might safely and reasonably be held up to the people as an object of imitation, it was Carsten Niebuhr. Not only was he a poor man, — an orphan, — born in a remote part of a remote province, far from all those facilities for acquiring knowledge, which in this age and country are poured out before the feet of the people; he was not even gifted in any extraordinary way by nature. He was in no sense of the word a *genius*. He had no imagination. His power of acquiring does not seem to have been extraordinarily rapid, nor his memory singularly retentive. In all cases where the force of that will, at once steady and ardent, which enabled him to master his favorite studies, was not brought to bear, his progress was slow and inconsiderable. It is not therefore in any supposed intellectual advantages that we must look for the causes of his rise to eminence. They are to be found rather in the moral qualities which distinguished him, qualities attainable in a greater or less degree by men of the humblest rank, of the most lowly intellect, the least favored by situation or connection. He possessed, in an eminent degree, the distinguishing virtues of his country, sincerity, unadulterated and faithful love of truth, and honesty. The zeal with which he gave himself to a pursuit which might enable him to be useful to his native district; the total absence of vanity which char-

acterized the whole course of his studies and of his journeyings; — the simplicity of his narrative, in which no more of himself and his individual feelings appears than is just necessary to keep up the thread of the story; —the rigorous accuracy and anxiety after truth for which his travels have ever been and still remain pre-eminently distinguished among all who preceded, and all who have followed him on the same ground, afford ample evidence of the singleness and the steadiness of the motives which actuated him. The most punctilious honor marked his disbursement of the funds intrusted to his care by the Danish government, and he ever abstained with the utmost exactness from applying a farthing of this money to any object which could be considered by others, or which his own more fastidious delicacy could regard, as a personal gratification.

"His self-command was perfect. He could abstain from what was agreeable, and do what was disagreeable to him. He was conscientious, sober, temperate even to abstemiousness, laborious and persevering; neither discouraged nor elated by the incidents which he must have known were inseparable from the career which he had chosen."

JONAS KING.

While the tribute of admiration is readily awarded to such men as Park, and Ledyard, and Belzoni, who have manifested an unconquerable perseverance and a noble enthusiasm and enlargement of views in extending the boundaries of science, and geographical discovery, there is still another class of men worthy of more exalted honor. We should be among the last to disparage the efforts of such men as we have named. We consider them as benefactors of mankind; we rejoice that they could break away from the call of avarice, from the syren voice of pleasure, and from the powerful attractions of home and native land, and spend their days in travelling through savage deserts, encountering the fierce suns of the tropics, and still fiercer men. We should rejoice to visit the grave of Belzoni, and remove the rubbish which time or the hand of the Bedouin may have gathered around his tomb. The names of Hornemann, and Salt, and Clapperton, and Parry, are not to be named lightly. They accomplished very much for the cause of science, and indirectly for the moral and spiritual emancipation of our race. Most of them were cut down early, but they did not fall into an untimely, much less into a dishonorable grave. Their names will be mentioned with respect in every future age of the world.

Notwithstanding, we are called to contemplate a higher species of excellence, a more noble disin-

terestedness, a more enduring renown. Men have gone into all the world to do good, not to explore pyramids, nor to measure obelisks, nor to watch the changes of heavenly bodies, but to sympathize in human calamity, to give to benighted men the lamp of eternal life, to extend the reign of civilization and of the Christian faith; not to send back polished vases, and granite statues, and classic fragments, but the report of nations saved, the joy of redeemed men, and the assured promise of still more glorious achievements. These men have not despised science and have not been unmindful of classic recollections. Still they went for a higher purpose; they devoted themselves to a more self-denying work; a nobler enthusiasm filled their souls, a richer treasure freighted their ships. They carried with them the hopes of heaven; they travelled for eternity. Many of them fell in the first onset, but their ashes rest in hope, and angels guard their repose.

Among the most honored names in this class of the benefactors of man, is that of Jonas King. In delineating a few of the incidents in his eventful life, we are sure that the consideration that we may be advancing that cause to which he has devoted his days, will apologize for what in other circumstances might seem inconsiderate or inexpedient. His name is public property; it is a part of his means of doing good.

Jonas King was born in 1793, at Hawley, a town in the western part of the county of Franklin, in the State of Massachusetts. His parents were worthy and estimable people, but were entirely unable to assist their son to obtain the advantages of education. It seems from the fact

which we are about to relate, that he was not in circumstances in his native town to acquire that common-school learning, which is the rich legacy of nearly all the children of New England.

In December, 1807, William H. Maynard, Esq. was engaged in instructing a school in Plainfield, a town adjacent to Hawley. One cold morning, on entering his school-room, Mr. Maynard observed a boy that he had not seen before, sitting on one of the benches. The lad soon made known his errand to his instructor. — He was fifteen years old; his parents lived seven miles distant; he wanted an education, and had come from home on foot, that morning, to see if Mr. Maynard could help him contrive how to obtain it. Mr. Maynard asked him if he had any acquaintances in the place who would assist him in acquiring an education. "No." "Can your parents render any assistance?" "No." "Have you any friends who will help you?" "No." "Well, how do you expect to obtain an education?" "I don't know, but I thought I would come and see you." Mr. Maynard told him to remain that day, and he would see what could be done. He discovered that young King was possessed of good sense, but of no uncommon brilliancy. He was particularly struck with the cool and resolute manner in which he undertook to conquer difficulties which would have intimidated common minds. In the course of the day, Mr. Maynard made provision for having him boarded through the winter in the family with himself, the lad paying for his services by manual labor. He gave himself diligently to study, in which he made commendable but not rapid proficiency, embracing every opportunity of

reading and conversation for obtaining knowledge; and thus he spent the winter.

The necessary preparation for college was acquired, we believe, under the tuition of the Rev. Jeremiah Hallock, of Plainfield. To this gentleman's faithful care and thorough instruction, a large portion of the young men who have acquired a liberal education for thirty years past, in the western counties of Massachusetts and in the adjoining portions of New York and Vermont are greatly indebted. A majority of a number of the classes who have been educated at Williams college, pursued their classical preparatory studies at Plainfield, and departed in a body to their collegiate residence with the truly patriarchal benedictions of their venerated instructor.

After spending the usual time of four years at Williams college, Mr. King graduated in 1816. The class with which he was connected was highly respectable, both in numbers and talents. To Mr. King, at commencement, was assigned one of the principal appointments, — the philosophical oration. For means of pecuniary support, he was almost wholly dependent on his own vigorous efforts in teaching school and in other ways. By the recommendation of the Rev. President Moore, which was very full in regard to all points, Mr. King was admitted to the patronage of the American Education Society, being the sixth on a list which now numbers more than fourteen hundred. The amount of assistance, however, which he received was very limited, as the resources of the society were, at that time, small, and his collegiate course terminated soon after he received the first appropriation.

On leaving Williams college, he repaired to the Theological Seminary at Andover, to avail himself of the invaluable opportunities which are there enjoyed in the study of the oriental languages. He left the seminary after completing the full course in 1819. Of his classmates, six are missionaries and two are presidents of colleges. At the foundation of the new college in Amherst, in 1821, Mr. King was immediately named as professor of the oriental languages and literature. A part of the intervening time, between the close of his residence at Andover and this appointment, was passed in missionary labors in the southern States.

Feeling his need of more ample preparation, to discharge the duties of his professorship, he concluded to visit France, and avail himself of the eminent advantages which the French capital holds out for oriental studies. His expenses were defrayed by the hands of generous private friendship. After residing some time in Paris, news was received of the death of the Rev. Levi Parsons, a distinguished missionary of the American Board of Commissioners for Foreign Missions, in Palestine. His only associate, the Rev. Pliny Fisk, in consequence of the bereavement, greatly needed a fellow-laborer, who, with a knowledge of Arabic and other languages, could accompany him in his contemplated journeys, preparatory to the establishment of the mission with which he was connected. Having received an intimation that Mr. King might be induced to offer his services for a limited period, he wrote to him immediately, earnestly requesting that some arrangement might be made to that effect. Mr.

King immediately endeavored to ascertain the path of duty, and with the advice of his intimate and valuable friend, S. V. S. Wilder, Esq., an American merchant, then residing in Paris, concluded to offer his services for three years. Mr. Wilder generously offered one hundred dollars a year for the time specified, and two other gentlemen made liberal donations towards defraying the necessary expenses. In referring to the dangers to which he might be exposed by travelling in unhealthy climates, and by other causes, Mr. King observes: "Here (at Paris,) I see around me, with crippled limbs and scarred bodies, men who risked their lives at Jena and Marengo, at Austerlitz and Waterloo, to gain a little perishable glory; and shall not I risk as much in the cause of the Prince of Peace, who gives to all his faithful followers the high prize of immortal glory and joys inconceivable?"

On Monday, September 30, 1822, Mr. King left Paris for Marseilles, and passed through Fontainbleau, Fontenay, Lyons, Nismes, &c. We copy a few extracts from his very interesting journal. "On the first of October, awoke in the morning just as the twilight appeared. I had rode all night. When I fell asleep it was rainy, dark and cheerless; but the rain was now past, and the clouds were all dispersed, except a light, fleecy girdle, hanging round the horizon, above which, in the east, the morning star seemed to twinkle with uncommon beauty, and in the west the moon, just past the full, was looking mildly down upon the Loire, whose waters faintly reflected her light as they glided silently along at the foot of the elevation on which I rode. As

daylight increased, cultivated hills, beautiful vineyards, and fertile plains rose to my view, and presented one of the most lovely scenes I had ever witnessed."

At Lyons, Mr. King remarks, "My emotions were indescribable. I stood on a spot where the Romans had once resided, where their emperors had lived and erected magnificent temples to their idols, where Hannibal and Cæsar with their conquering armies had passed along, where hordes of Saracens had spread their desolations, and where Pothinus and Irenæus with nineteen thousand followers took their flight to glory amid the flames of persecution. I followed them, in my imagination, through their last conflict, till I saw them bowing before the throne of God and joining in ascriptions of praise to the Lamb that was slain."

On the 28th of October, while sailing out of the harbor of Marseilles, Mr. King exclaims: "I could not but feel some emotions on leaving a country where I had spent one of the most interesting years of my life. Land of science and of sin, of gaiety and pleasure, I bid thee farewell! The sun shines brightly on thy beautiful fields, the mild gales breathe softly on thy enchanting hills; and along the borders of thy streams, in the midst of vines and olives, lie scattered the cottages of peasants and the mansions of nobles. Thou hast within thy bosom all that can gratify genius, and taste, and sense. Oh, when shall the spirit of Massillon rest upon thy priests! When shall the light of millenial glory dawn upon thy population! With fervent prayers for thy prosperity, I bid thee farewell!"

On the second of November, Mr. King reached Malta, and was warmly welcomed by the missionaries, Messrs. Fisk and Temple. On the 10th of January, 1823, Mr. King, in company with Messrs. Fisk and Wolff, reached Alexandria, in Egypt. In this city they were actively employed about ten days, when they departed for Rosetta and Cairo. In the course of their travels through this land of signs and wonders, they took occasion to visit many specimens of ancient art and science. In describing the antiquities of Gornon, near the hundred-gated Thebes, the travellers remark: "The principal room in the tomb visited by Belzoni, was fifty feet by thirty. Here, when the tomb was opened, was a sarcophagus of alabaster, which has been removed to London, and is now in the museum. Adjoining this is a room thirty feet square, on three sides of which is a projection which forms a kind of table. All the walls of the rooms and of the passages are covered with hieroglyphics of the finest kind. In one place are portrayed priests, dressed in white, handling serpents; in another, persons offering sacrifices; in a third, a company of prisoners; in a fourth, dead bodies, &c. All these apartments are cut out of the solid rock. How much labor to prepare a tomb for one man!"

After visiting many other interesting spots, the travellers returned to Cairo. The time which they spent in Egypt was about three months. In connection with Mr. Wolff, they preached the gospel in English, French, German, Italian, Greek, Hebrew and Arabic, distributed about nine hundred copies of the Bible, or parts of it, in twelve languages, and nearly three thousand tracts.

On the seventh of April, 1823, Mr. King, after suffering severely from the scorching winds of the desert and from the want of water, reached the "promised land." We extract a few paragraphs in regard to the journey.

"After some refreshment we took a Persian Testament and Genesis in Arabic and went to Hadgi Mohammed, the dervish. We sat down with him on his blanket spread on the sand, with the sun beating on our heads, and then showed him our books. He reads well in Persian and Arabic. Of the other dervishes not one knows how to read. While we were reading with him, most of the dervishes and several Turks and Armenians gathered around and listened. Mohammed read in Genesis, and said that it was *very good.* Another Turk then took it, and read that God *rested* on the seventh day, and remarked angrily that it was infidelity to say that God *rested.* Mr. Wolff tried to explain, but to no purpose, till he said he had given such a book to the Mufti of Jerusalem, who said it was good. This argument silenced him at once. We gave the book of Genesis to Mohammed. While we were sitting with him, Elias, the Maronite, began to beat his mother, because she did not cook his victuals as he wished. Mr. Wolff went to him and reproved him severely for such conduct. The Turks said, *tauntingly,* 'He is a Christian.' We were glad they heard Mr. Wolff's admonition, in which he showed them how inconsistent his behaviour was with the spirit of the gospel. The unnatural man at length relented, and went to his mother and kissed her hand in token of acknowledgment. Towards evening, two Turks had a dispute, which finally led to

blows. Hadgi Ibrahim interfered, and by loud words and a few blows settled the quarrel. After this, the dervish Mustapha became very angry with his ass, and, like Balaam, fell to beating him, and concluded by calling him a *Jew!*"

On the 14th of March, the travellers experienced a strong scorching wind from the south east. The air seemed as if it issued from the mouth of an oven. Many of the Arabs bound a handkerchief over their mouths and noses, as a defence against it. The thermometer in their tent was at 99°. The wind sometimes blew the sand over the hills like snow in a storm.

About 4 o'clock in the afternoon of the 25th of April, they "stood within the gates of Jerusalem." "The scenes and events of four thousand years," say they, "rushed upon our minds; events in which Heaven, and Earth, and Hell, had felt the deepest interest. This was the place selected by the Almighty for his dwelling, and here his glory was rendered visible. This was the perfection of beauty and the glory of all lands. Here David sat and tuned his harp, and sung the praises of Jehovah. Hither the tribes came up to worship. Here enraptured prophets saw bright visions of the world above, and received messages from on high for guilty man. Here our Lord and Saviour came in the form of a servant, and groaned, and wept, and poured out his soul unto death, for the redemption of man."

While resident in this country, Mr. King visited the principal towns, and objects of curiosity in Palestine, resided, some time, for the purpose of acquiring Arabic, at a monastery on Mount Lebanon, and performed various tours in the surrounding regions of Syria, and the ancient Phœnicia.

On the 26th of September, 1825, three years after leaving Paris, Mr. King finally departed from the Holy Land, proceeded to Tarsus, the birth-place of Paul, and from thence travelled by land to Smyrna, where he arrived on the 23d of December, eighty-nine days after leaving his brethren in Syria. At Smyrna he remained till the 15th of June, 1826, in the study of modern Greek, and then passed by land to the sea of Marmora, and across that sea to Constantinople. "While in this city," Mr. King remarks, "I viewed the place from the tower of Pera. The prospect is enchanting. Hills and valleys covered with the habitations of 600,000 souls; the mighty domes and lofty minarets of mosques; the palace of the sultan, encircled with gardens, beautiful as Eden; the waters of the Bosphorus, and the sea of Marmora, dividing the continent of Europe and Asia, and whitened with sails; and lofty mountains, among which is Olympus, with everlasting snows upon his hoary head; all combine to present a view, perhaps unequalled for beauty and grandeur, in any part of the world."

While in Syria, Mr. King published a Farewell Letter, having special reference to the Armenian population. This letter being translated into Turkish, with considerable additions, by Mr. Goodell, found its way to Constantinople, and produced a very great excitement among the hundred thousand Armenians in that capital.

Mr. King returned by water to Smyrna, in July. In August he went on board the United States' ship Erie, bound to Mahon, in Minorca, and touched at Tripoli and Algiers in Africa, on his way to that port. From thence he proceeded

to Spain, France, and England, making some stay in the two latter countries.

To provide for the wants of the Armenian population, Mr. King secured donations in France and England, to the amount of about eight hundred dollars, with which he purchased fonts of Armenian and Arabic types. Among the contributors were some of the most distinguished benefactors and philanthropists of the age. A printing press, for the Armenian language, was forwarded to Malta about the same time.

Mr. King arrived in his native country on the 4th of September, 1827. During six or eight months subsequent, he was employed on agencies, in the northern and middle States, in behalf of the missionary cause. Having been invited by a number of friends, to proceed to Greece in one of the vessels which was to carry out supplies to the afflicted inhabitants of that country, he resigned his professorship of the Oriental languages in Amherst college, and early in June, 1828, embarked at New York, for Greece. He arrived at Paros on the 26th of July, and was cordially welcomed by the Greek government. He soon after resumed his connection with the American Board, and ever since has been actively engaged, chiefly at Athens, in establishing schools, in circulating the Scriptures, school books, and tracts, and diffusing, in various ways the principles of knowledge and Christianity. For several years he had under his control a high school at Athens, which at one time contained nearly two hundred scholars; and his influence on the schools and the education of Greece has been great and salutary. The Greek national education is more truly reli-

gious, more effective in developing moral sentiments and a real independence of thought, than it would have been but for Mr. King; and the national mind of that people has received, through his labors, several fundamental ideas, which must exert great influence upon the future developments of that mind.

It is believed that Greece must ultimately be blessed with religious liberty, notwithstanding the apparent tendency of things has of late years been the other way. Education has gradually been brought under an ecclesiastical influence adverse to its freedom in matters of religion. The Greek Catechism having been forced into the schools, Mr. King was obliged to retire from all immediate connection with them. The ecclesiastical influence was strikingly apparent in the Constitution adopted by the Greeks in the year 1844, which forbids proselyting, and has subjected Mr. King to the trial of persecution for righteousness' sake.

Soon after the adoption of the Constitution, Mr. King was charged in the newspapers at Athens, with an attempt at proselytism; and the charge was soon followed by the allegation, that he had uttered impious and injurious language respecting the Virgin Mary. Mr. King prepared and published a small volume, defending himself from the charge, by quoting at considerable length the sentiments of Epiphanius, Chrysostom, Clemens, and others, names held in the highest esteem by the Greeks, and showing that their belief accorded with his own. This volume he sent to the most distinguished men in the Greek nation, civil and ecclesiastical, and it made a strong impression. Several persons of distinction gave their voice in

its favor. The Greek Synod, however, denounced the book, and demanded of the government his prosecution for proselytism. The book was also denounced by the "Great Church" at Constantinople. Soon after, he was assaulted by a fanatical Greek in the streets of Athens, with the intent to do him injury, if not to take his life, but a soldier interfered and delivered him.

The case came to a trial in the civil courts, first, whether the charges against him were open to a legal prosecution. It was carried at length to the Areopagus, in April, 1846. He thus wrote in May; —

"My two lawyers, Paul Calligas and Spyridon Triantaphylles, spoke well. After them I asked permission of the President of the court, Mr. Clonaris, to speak. He replied, you have your lawyers. But, said I, I have a word also. Say on, said he. So I commenced and continued to speak for fifteen or twenty minutes, in the midst of repeated interruptions on the part of the President, who finally, just as I had reached the subject of images, silenced me altogether. Seeing that it was impossible for me to proceed any further, without exposing myself to be put under arrest, I ceased. And I have since thought that it was providential, in order to save me from the ill treatment which I might have received, had I finished all I had to say on the subject of images and transubstantiation.

"I am told that the most distinguished lawyers of Athens, who were present at my trial, have expressed their opinion that there is no cause of accusation against me.

"Yesterday the decision of the court of the

Areopagus was given against me. So now I must be tried before the criminal court, where all thieves and robbers and murderers are tried. I shall be tried, I suppose, by a jury; but what jury will have independence enough to declare me innocent, after the Holy Synod has declared me guilty of blasphemy, and after three courts have found cause of complaint against me?

"My trial is to be at Syra, July 22, just one year from the time I began to distribute the little book called my 'Defence.' If I am condemned, I suppose I shall on that day, be imprisoned at Syra. My two lawyers, Paul Calligas and Spyridon Triantaphylles, will be there to plead my cause; which, I believe, they have conscientiously undertaken to defend. Their pleas before the Areopagus, already published, have produced and are producing, a happy influence in my favor, as I have reason to believe. And not only did they come out boldly before the Areopagus, but in private circles they plead my cause, I believe, and have done much to convince many persons that it is just. At Syra they will probably enter into the subject of my trial much more theologically than they could before the Areopagus; for this tribunal is confined principally to the right application of the law, but does not enter into the subject, to determine whether the person accused is guilty, or not, of the charge brought against him. Should the jury decide in my favor, and against the Holy Synod, it will be wonderful, and will have great influence, I doubt not, in opening the eyes of many to see the real situation of this church.

"A judge here, and representative of the na-

tion, said to my wife, day before yesterday, that he thought I might be in great danger at Syra, when I go there to be tried; that the people might arise and stone me; and that it would be better to have the case put off, if I could, for a while, &c. But I trust the Lord, who has thus far protected me, will protect me to the end. My duty is clear; and that is, to go to Syra and take what comes. I have not been wholly without apprehensions as to what may befall me there; still I do not feel very anxious with regard to it. The hand of the Lord has appeared to be so manifest in all this affair, from the commencement to the present time, that I feel that I shall live, and in some way or other gain the victory."

The result of this prosecution is not known when this edition goes to the press.

The degree of Doctor in Divinity has been conferred on Mr. King by one of the colleges of New England.

We close this brief memoir with a letter from Mr. King, as honorable to his feelings as it was gratifying to the gentlemen connected with the Society to whom it was addressed.

"*Tenos, (Greece,)* 27*th May*, 1830.

"In the year of 1816, as near as I recollect, just as I was about finishing my collegiate studies, I received from the American Education Society a donation of fifty dollars; and though it was not expected, as I suppose, by the Society, that I should ever refund that sum, and though, since the refunding system has been adopted, it is the custom of the Society, as I am informed, with regard to that system, to make an exception in

favor of missionaries, still I am happy to return the above mentioned sum, with the interest, which, by this time nearly equals the principal; and I therefore send you *one hundred* dollars, which I wish you to accept as payment for the fifty dollars which I received about fourteen years ago. It is not long, since I have had it in my power to remit this sum, which I hope may be the means of aiding some one more worthy than myself."

HUMPHREY DAVY.

Humphrey Davy was born at Penzance, in Cornwall, England, in 1778. His father followed the profession of a carver in wood, in that town, where many of his performances are still to be seen in the houses of the inhabitants. All that we are told of Davy's school education is, that he was taught the rudiments of classical learning at a seminary in Truro. He was then placed by his father, with an apothecary and surgeon in his native place; but instead of attending to his profession, he spent his time either in rambling about the country or in experimenting in his master's garret, sometimes to the no small danger of the whole establishment. The physician and Davy at last agreed to part.

When rather more than fourteen years old, he was placed as pupil with another surgeon residing in Penzance; but it does not appear that his second master had much more success than his first, in attempting to give him a liking for the medical profession. The future philosopher, however, had already begun to devote himself, of his own accord, to those sciences in which he afterwards so greatly distinguished himself; and proceeding upon a plan of study which he had laid down for himself, he had, by the time he was eighteen years old, obtained a thorough knowledge of the rudiments of natural philosophy and chemistry, as well as made some proficiency in botany, anatomy and geome-

try. The subject of metaphysics, it is stated, was also embraced in his reading at this period.

But chemistry was the science to which, of all others, he gave himself with the greatest ardor; and, even in this early stage of his researches, he seems to have looked forward to reputation from his labors in this department. "How often," said he, in the latter period of his life, "have I wandered about those rocks in search after new minerals, and when tired sat down upon those crags, and exercised my fancy in anticipations of future renown." The peculiar features of this part of the country doubtless contributed not a little to give his genius the direction it took. The mineral riches concealed under the soil formed alone a world of curious investigation. The rocky coast presented a geological structure of inexhaustible interest. Even the various productions cast ashore by the sea were continually affording new materials of examination to his inquisitive and reflecting mind. The first original experiment, it is related, in which he engaged, had for its object to ascertain the nature of the air contained in the bladders of sea-weed. At this time he had no other laboratory than what he contrived to furnish for himself, by the assistance of his master's vials and gallipots, the pots and pans used in the kitchen, and such other utensils as accident threw in his way. These he converted with great ingenuity to his own purposes. On one occasion, however, he accounted himself particularly fortunate in a prize which he made. This was a case of surgical instruments with which he was presented by the surgeon of a French vessel that had been wrecked on the coast, to whom he had done some kind

offices. Examining his treasure with eagerness, Davy soon perceived the valuable aid he might derive in his philosophical experiments from some of the articles. One of the principal of them was, in no long time, converted into a tolerable air-pump. The proper use of the instruments was, of course, as little thought of by their new possessor as that of his master's gallipots which he was wont to carry up to his garret. Davy's subsequent success as an experimentalist, was owing in no small degree to the necessity he was placed under, in his earlier researches, of exercising his skill and ingenuity in this manner. "Had he," remarks his biographer, "been supplied, in the commencement of his career, with all those appliances, which he enjoyed at a later period, it is more than probable that he might have never acquired that wonderful tact of manipulation, that ability of suggesting expedients, and of contriving apparatus so as to meet and surmount the difficulties, which must constantly arise during the progress of the philosopher through the unbeaten tracks and unexplored regions of science. In this art, Davy certainly stands unrivalled; and, like his prototype, Scheele, he was unquestionably indebted for his address to the circumstances which have been alluded to. There was never, perhaps, a more striking exemplification of the adage, that 'necessity is the parent of invention.'"

Davy first pursued his chemical studies without teacher or guide, in the manner which has been described, and aided only by the most scanty and rude apparatus. When still a lad, however, he was fortunate in becoming acquainted with Mr. Gregory Watt, son of the celebrated James Watt.

This gentleman having come to reside at Penzance for the benefit of his health, lodged at Mrs. Davy's, and soon discovered the talent of her son. The scientific knowledge of Mr. Watt gave an accurate direction to the studies of the young chemist, and excited him to a systematic perseverance in his favorite pursuit. He was also providentially introduced to the notice of Mr. Davies Gilbert, since president of the Royal Society.

The boy, we are told, was leaning on the gate of his father's house, when Mr. Gilbert passed, accompanied by some friends, one of whom remarked, that there was young Davy, who was so much attached to chemistry. The mention of chemistry immediately fixed Mr. Gilbert's attention; he entered into conversation with the young man, and becoming speedily convinced of his extraordinary talents and acquirements, offered him the use of his library, and whatever other assistance he might require in the pursuit of his studies. Mr. Gilbert and Mr. Watt, soon after this, introduced Davy to the celebrated Dr. Beddoes, who had just established at Bristol what he called his Pneumatic Institution for investigating the medical properties of the different gases. Davy, who was now in his nineteenth year, had for some time been thinking of proceeding to Edinburgh, in order to pursue a regular course of medical education; but Dr. Beddoes, who had been greatly struck by different proofs which he had given of his talents, and especially by an essay in which he propounded an original theory of light and heat, having offered him the superintendence of his new institution, he at once accepted the invitation. "The young philosopher," remarks a

biographer, "was now fairly entered on his proper path, and from this period we may consider him as having escaped from the disadvantages of his early lot. But it was while he was yet poor and unknown, that he made those acquirements which both obtained for him the notice of his efficient patrons, and fitted him for the situation in which they placed him. His having attracted the attention of Mr. Gilbert, as he stood at his father's gate, may be called a happy incident in the providence of God; but it was one that never would have happened had it not been for the proficiency he had already made in science by his own endeavors. He had this opportunity of emerging from obscurity; but had he not previously labored in the cultivation of his mind, it would have been no opportunity at all."

The experiments conducted by Davy, and under his direction, at the Bristol institution, were soon rewarded by important results; and of these Davy, when he had just completed his twenty-first year, published an account, under the title of "Researches, chemical and philosophical, chiefly concerning nitrous oxide, and its respiration." In this publication, the singularly intoxicating effects produced by the breathing of nitrous oxide, were first announced. This annunciation excited considerable sensation in the scientific world, and at once made Davy generally known as a most ingenious and philosophic experimentalist. He was, in consequence, soon after its appearance, invited to fill the chemical chair of the Royal Institution, then newly established.

When he commenced his lectures, he was scarcely twenty-two years of age; but never

was success in such an undertaking more marked and gratifying. He soon saw his lecture-rooms crowded, day after day, by all that was most distinguished in the rank and intellect of the metropolis; and his striking and beautiful elucidations of every subject that came under his review, riveted often to breathlessness the attention of his splendid auditory. The year after his appointment to this situation he was elected professor of chemistry to the Board of Agriculture; and he greatly distinguished himself by the lectures which, for ten successive sessions, he delivered in this character. They were published in 1813, at the request of the Board.

In 1806, he was chosen to deliver the Bakerian lecture before that Society, and he performed the same task for several successive years. Many of his most brilliant discoveries were announced in these discourses. In 1812, he received the honor of knighthood from the prince regent, being the first person on whom his royal highness conferred that dignity. Two days after, he married a lady of considerable fortune. In 1813, he was elected a corresponding member of the French Institute. He was created a baronet in 1818. In 1820, he was chosen a foreign associate of the Royal Academy of Sciences at Paris, on the death of the illustrious Watt. He had been for some time secretary of the Royal Society; and on the death of Sir Joseph Banks, in 1820, he was, by an unanimous vote, raised to the presidency of that learned body, — an office which he held till he was obliged to retire on account of ill health, in 1827, when his friend and first patron, Mr. Davies Gilbert, was chosen to succeed him. Little, we

may suppose, did either of the two anticipate, when they first met, thirty years before, at the gate of Mrs. Davy, that they would thus stand successively, and in this order, at the head of the most distinguished scientific association in England.

The first memoir by Davy, which was read before the Royal Society, was presented by him in 1801. It announced a new theory, which is now generally received, of the galvanic influence, or the extraordinary effect produced by two metals in contact with each other, when applied to the muscle even of a dead animal, which the Italian professor, Galvani, had discovered. It was supposed, both by Galvani and his countryman Volta, — who also distinguished himself in the investigation of this curious subject, — that the effect in question was an electrical phenomenon, whence galvanism used to be called animal electricity; but Davy showed, by many ingenious experiments, that, in order to effect it, the metals in fact underwent certain chemical changes. Indeed, he proved that the effect followed when only one metal was employed, provided the requisite change was by any means brought about on it, as, for example, by the interposition, between two plates of it, of a fluid calculated to act upon its surface in a certain manner. In his Bakerian lecture for 1806, he carried the examination of this subject to a much greater length, and astonished the scientific world by the announcement of a multitude of the most extraordinary results, from the application of the galvanic energy to the composition and decomposition of various chemical substances. From these experiments he arrived at the conclusion, that the

power called chemical affinity was in truth identical with that of electricity. Hence the creation of a new science, now commonly known by the name of electro-chemistry, being that which regards the supposed action of electricity in the production of chemical changes. The discourse, in which these discoveries were unfolded, was crowned by the French Institute with their first prize, by a decision which reflects immortal honor upon that illustrious body; who thus forgot not only all feelings of mutual jealousy, but even the peculiar and extraordinary hostility produced by the war which then raged between the two countries, in their admiration of genius and their zeal for the interests of philosophy.

In the interesting and extraordinary nature of its announcements, the Bakerian lecture of 1807 was as splendid a production as that of the former year. There are certain substances, as the reader is aware, known in chemistry by the name of alkalies, of which potash and soda are the principal. These substances chemists had, hitherto in vain, exhausted their ingenuity and the resources of their art in endeavoring to decompose. The only substance possessing alkaline properties, the composition of which had been ascertained, was ammonia, which is a gas, and is therefore called a volatile alkali; and this having been found to be a compound of certain proportions of hydrogen and nitrogen, an opinion generally prevailed that hydrogen would be found to be also a chief ingredient of the *fixed* alkalies. Davy determined, if possible, to ascertain this point, and engaged in the investigation with great hopes of success, from the surpassing powers of decomposition which he

had found to belong to his new agent, the galvanic influence. The manner in which he pursued this subject is among the most interesting specimens of scientific investigation on record.

One of the most important of the laws of galvanic decomposition, which he had previously discovered, was, that when any substance was subjected to this species of action, its oxygen (an ingredient which nearly all substances contain) was developed at what is called the positive end or pole of the current of electricity, while, whenever any hydrogen or inflammable matter was present, it uniformly appeared at the opposite or negative pole. Proceeding upon this principle, therefore, Davy commenced his work with a fixed alkali; and at first submitted it, dissolved in water, to the galvanic action. The result, however, was, that the water alone was decomposed, nothing being disengaged by the experiment but oxygen and hydrogen, the ingredients of that fluid, which passed off as usual, the former at the positive, the latter at the negative pole. In his subsequent experiments, therefore, Davy proceeded without water, employing potash in a state of fusion; and having guarded the process from every other disturbing cause that presented itself, by a variety of ingenious arrangements, he had at last the satisfaction of seeing the oxygen gas developed, as before, at the positively electrified surface of the alkali, while, at the same time, on the other side, small globules of matter were disengaged, having all the appearances of a metal. The long agitated question was now determined; the base of the fixed alkalies was clearly metallic. To ascertain the qualities of the metallic residue which he had

thus obtained from the potash, was Davy's next object. From its great attraction for oxygen, it almost immediately, when exposed to the atmosphere, became an alkali again, by uniting with that ingredient; and, at first, it seemed on this account hardly possible to obtain a sufficient quantity of it for examination. But at last Davy thought of pouring over it a thin coating of the mineral fluid called naptha, which both preserved it from communication with the air, and, being transparent, allowed it to be examined.

But there was another course of investigation, into which this philosopher entered, which resulted in a practical discovery of high importance. This was the contrivance of the *safety-lamp*. In coal-mines, frequent explosions had been caused by the *fire-damp*, or inflammable gas, which is found in many parts of them. By a series of experiments, Davy found that this dangerous gas, which was known to be nothing more than the hydrogen of the chemists, had its explosive tendencies very much restrained by being mixed with a small quantity of carbonic acid and nitrogen (the ingredients which along with oxygen form atmospheric air;) and that, moreover, if it did explode, when so mixed, the explosion would not pass through apertures less than one seventh of an inch in diameter. Proceeding therefore upon these ascertained facts, he contrived his safety-lamp. It consists of a small light fixed in a cylindrical vessel, which is everywhere air-tight except in the bottom, and which is formed of fine wire-gauze, and in the upper part there is a chimney for carrying off the foul air. The air admitted through the gauze suffices to keep up the flame, which in

its combustion produces enough of carbonic acid and nitrogen to prevent the fire-damp, when inflamed within the cylinder, from communicating the explosion to that which is without. The heretofore destructive element, thus caught and detained, is therefore not only rendered harmless, but actually itself helps to furnish the miner with light, the whole of the interior of the cylinder being filled with a steady green flame, arising from the combustion of the hydrogen, which has been admitted in contact with the heat, but cannot carry back the inflammation it has received to the general volume without. Armed with this admirable protection, therefore, the miner advances without risk, and with sufficient light to enable him to work, into recesses which formerly he would not have dared to enter. The safety-lamp has already been the means of saving many lives, and has enabled extensive mines or portions of mines to be wrought, which, but for its assistance, must have remained unproductive. The coal-owners of the northern districts, in 1817, invited Sir Humphrey Davy to a public dinner, and presented him with a service of plate of the value of £2,000, in testimony of what they felt to be the merit of this invention.

"The transformations of chemistry," remarks Mr. John F. W. Herschel, "by which we are enabled to convert the most apparently useless materials into important objects in the arts, are opening up to us every day sources of wealth and convenience, of which former ages had no idea, and which have been pure gifts of science to man. Every department of art has felt their influence, and new instances are continually occurring of the

unlimited resources which this wonderful science develops in the most sterile parts of nature. Not to mention the impulse which its progress has given to a host of other sciences, what strange and unexpected results has it not brought to light in its application to some of the most common objects! Who, for instance, would have conceived that linen rags were capable of producing *more than their own weight* of sugar, by the simple agency of one of the cheapest and most abundant acids? — that dry bones could be a magazine of nutriment, capable of preservation for years, and ready to yield up their sustenance in the form best adapted to the support of life, on the application of that powerful agent, steam, which enters so largely into all our processes, or of an acid at once cheap and durable? — that saw-dust is susceptible of conversion into a substance bearing no remote analogy to bread; and though certainly less palatable than that of flour, yet in no way disagreeable, and is both wholesome and digestible, as well as highly nutritive? What economy in all processes where chemical agents are employed, is introduced by the exact knowledge of the proportions in which natural elements unite, and their mutual powers of displacing each other! What perfection in all the arts where fire is employed, either in its more violent applications (as, for instance, in the smelting of metals by the introduction of well-adapted fluxes, whereby we obtain the whole product of the ore in its purest state), or in its milder forms, as in sugar-refining, the whole modern practice of which depends on a curious and delicate remark of a late eminent scientific chemist on the nice adjustment of temperature at which the crystalliza-

tion of syrup takes place; and a thousand other arts, which it would be tedious to mention."

We have not space to enumerate many other splendid discoveries of this great philosopher. In 1827, his health had become so poor, that he found it necessary to seek relaxation from his engagements, and accordingly resigned the presidency of the Royal Society. Immediately after this he proceeded to the continent. During his absence from England, he still continued his chemical researches, the results of which he communicated in several papers to the Royal Society. He also, notwithstanding his increasing weakness and sufferings, employed his leisure in literary compositions on other subjects, an evidence of which appeared in his "Salmonia," a treatise on fly-fishing, which he published in 1828. This little book is full of just and pleasing descriptions of some of the phenomena of nature, and is imbued with an amiable and contented spirit. His active mind, indeed, continued, as it would seem, to exert itself to the last, almost with as unwearied ardor as ever. Besides the volume which we have just mentioned, another work, entitled "The Last Days of a Philosopher," which he also wrote during this period, has been given to the world since his death. He died at Geneva, on the 30th of May, 1829. He had only arrived in that city the day before; and having been attacked by an apoplexy after he had gone to bed, expired at an early hour in the morning.

"No better evidence," says his biographer, "can be desired than that which we have in the history of Davy, that a long life is not necessary to enable an individual to make extraordinary

progress in any intellectual pursuit to which he will devote himself with all his heart and strength. This eminent person was indeed early in the arena where he won his distinction, and the fact, as we have already remarked, is a proof how diligently he must have exercised his mental faculties during the few years that elapsed between his boyhood and his first appearance before the public. Although during this time he had scarcely any one to guide his studies, or even to cheer him onward, yet, notwithstanding that, he had taken his place among the known chemists of the age, almost before he was twenty-one. The whole of his brilliant career in that character, embracing so many experiments, so many literary productions, and so many splendid and valuable discoveries, extended only over a space of not quite thirty years. He had not completed his fifty-first year when he died. Nor was Davy merely a man of science. His general acquirements were diversified and extensive. He was familiar with the principal continental languages, and wrote his own with an eloquence not usually found in scientific works. All his writings, indeed, show the scholar and the lover of elegant literature, as well as the ingenious and accomplished philosopher. Like almost all those who have greatly distinguished themselves in the world of intellect, he selected his one favorite path, and persevered in it with great energy; while he nevertheless revered wisdom and genius in all their manifestations."

Of the religious opinions and feelings of Sir Humphrey Davy we know very little. The following striking sentence is found in one of his moral works. "I envy," says he, "no quality of

the mind or intellect in others; not genius, power, wit, or fancy; but if I could choose what would be most delightful, and I believe most useful to me, I should prefer *a firm religious belief* to every other blessing."

ADAM CLARKE.

We suppose that no one will deny to Dr. Clarke the claim of great and multifarious learning, and of most patient and unwearied industry in whatever he undertook. The soundness of his judgment, the clearness of his perceptions, and the strength of his reasoning powers are in very high estimation. The truth of some of the religious doctrines which he maintained, may be questioned in many of the divisions of the Christian church; yet the high characteristics of energy, perseverance, supreme devotion to one great object, all will cheerfully unite in awarding to him. He was unquestionably the most learned man ever connected with the Methodist church.

Adam Clarke was born at Cootinagtug, about thirty miles from the city of Londonderry, Ireland, in the year 1760. His father was a member of a respectable English family. His mother was of Scottish descent. Reduced fortunes were the reasons of their removing to Ireland. His parents were pious and intelligent people. As soon as he could well be taught anything, he was instructed to fear and love the God and Father of all, and to worship him in spirit and in truth, through the only Mediator.

The religious principles, thus early implanted, expanded and strengthened as he advanced in years. His father being diligently engaged from day to day in his occupation as a farmer, had not

perhaps discerned in his son any peculiar predilection for learning. Had this been the case, it is very probable that he would not have cherished it, but that he would have judged it most prudent to turn the attention of his son towards trade and commerce. Though he was able to have imparted to him a sound and mature education, he withheld the boon in a great measure, partly from his circumstances and prospects in life, and partly because he foresaw that his agricultural cares would too frequently engage his time as well as divide the attention of his pupil to too great a degree to anticipate any early proficiency in learning.

Having designed his son for trade, Mr. Clarke placed him under the care of Mr. Bennett, an extensive linen-manufacturer, in the neighborhood. The lad had either no power or no disposition to throw any obstacles in the way of a connection which his father evidently desired, and to which, perhaps, he himself thought he should be able to reconcile himself. But whether he betrayed his aversion to manual labor, or whether he discovered his strong desire for study, it was soon perceived that he was very much dissatisfied. Accordingly a separation took place between him and his master, alike honorable to all the parties concerned. His love of reading, at the age of nine years, was intense. To gratify this passion, he would undergo any privations and submit to any hardships. The pence he obtained for good behavior and extra work, he never expended for toys and sweetmeats, but carefully preserved them for the purchase of books.

Mr. Bennett continued till his death a steady

friend and correspondent of Mr. Clarke. About this time, the founder of Methodism, the Rev. John Wesley, was active in his inquiries after pious and promising young men to assist him in the work of the ministry. Adam Clarke was pointed out to him as a youth of promise, by an individual who had become acquainted with his talents. Mr. Wesley had sometime before founded a school at Kingswood, near Bristol, for the education of the sons of preachers. After a short correspondence, young Clarke was sent to this school. Unhappily, the treatment which he received from the master was harsh and violent. Some have supposed it to have arisen out of a determination on the part of the pupil to apply himself to the acquisition of more extensive knowledge than the system or resources of that seminary contemplated. It was during this trying period that he laid the foundation of that profound acquaintance with the Hebrew language, to which he ultimately attained. At an early age, he took for his motto, "through desire, a man, having separated himself, seeketh and intermeddleth with all wisdom." Mr. Wesley soon after arrived at Kingswood, and the pains and fears of Mr. Clarke were dispersed. That acute observer perceived and estimated the excellence of his persecuted protege, and in a short time adjudged him to be worthy to undertake the labors of an evangelical itinerancy. Mr. Clarke entered on his public work in 1782. Several circumstances combined to render him a preacher of the highest popularity among the Methodists, and of the greatest usefulness in extending the influence and exalting the character of that denomination.

At the age of twenty-two years, he had upon his hands the study of the Latin, Greek, Hebrew and French languages, but as he was obliged to travel several miles every day, and preached on an average thirty days in every month, he did not make much progress. About this time, he read four volumes of Church History while riding on horseback. Owing to the injudicious conduct of an acquaintance, Dr. Clarke relinquished his studies for the space of four years, but was induced by Mr. John Wesley to resume them. During eleven months, in the year 1784, he preached five hundred and sixty-eight sermons, and travelled many hundreds of miles. This was an average of nearly two sermons every day. He also, during this time, made himself master of the science of chemistry. His attention was first directed to biblical criticism by the loan, from a friend, of a Hebrew folio Bible, with various readings, which he carefully studied. In 1786, he recommenced the study of the Greek and Latin and the Septuagint version of the Scriptures. He had no teacher, and his stock of books was small, yet he read and collated the original texts in the Polyglot, particularly the Hebrew, Samaritan, Chaldee, Syriac, Vulgate and Septuagint.

Dr. Clarke was an example of temperance and persevering industry. "Rising early, and late taking rest, avoiding all visits of ceremony and journeys of mere pleasure and recreation, restricting himself to the most wholesome diet and temperate beverage, not allowing unnecessary intrusion on his time; — these were among the means by which he at once performed so much important duty, acquired such a store of knowl-

edge, and retained so unusual a portion of sound and vigorous health." Dr. Clarke applied himself to the study of languages for the purpose of assisting the British and Foreign Bible Society.

In the year 1795, he made an entire new translation of the New Testament from the Greek. His principal work is his Commentary on the Old and New Testaments. He commenced this great undertaking at the age of twenty-six, and spent forty years of close and unremitting study upon it. He literally translated every word, comparing the whole with all the *ancient* versions and the most important of the *modern*, and collated all with the various readings of the most eminent biblical scholars, and illustrated the whole by quotations from ancient authors, Rabbinical, Greek, Roman, and Asiatic. In this arduous labor he had no assistant, nor even a week's help from an amanuensis; on the contrary, he performed during the whole of this period, with the utmost fidelity, the arduous labors of a Methodist preacher. Whatever may be said of its doctrines, its criticisms, and its interpretations, no one can deny that it exhibits an uncommon display of ingenuity and industry, and a vast accumulation of learning.

Dr. Clarke died of the Asiatic cholera, at Bayswater, August 25, 1832. He left his residence the day previous to preach at Bayswater, on the Sabbath. He was attacked in the night, and died at eleven the next day, at the age of seventy-two.

COUNT RUMFORD.

Benjamin Thompson, the distinguished Count Rumford, gave an early promise of his future elevation, although it was little heeded by those with whom he associated. His mind was constantly led away from the pursuits which were assigned to him, to others more congenial to his aspirations. He was born at Woburn, in Essex county, Mass., in 1752, of humble parents, no way distinguished from the laboring community which constituted the bulk of the population of agricultural villages before the Revolution. His father died during his infancy, and his relative and guardian afforded him the ordinary advantages of a common country school. His tastes soon began to show themselves, and the usual sports of boyhood were exchanged for the use of mechanic tools, and drafts of rather wild and impracticable models of perpetual motion. His zeal and perseverance in these fruitless occupations drew forth the surprise and, for the most part, the condemnation of those around him. But although he did not pursue with ardor the thrifty occupations of common industry, he never gave his time to vicious pursuits and the calls of pleasure. The anxiety of his mother and friends was only that he would not be able to learn any craft by which his livelihood would be secured.

At thirteen years of age, he was placed as an apprentice in charge of Mr. Appleton, a merchant of Salem, in whose family there still remains a

relic, the name of "Benjamin Thompson," neatly cut on the frame of the shop-slate. His success in this clerkship was not encouraging; he hankered for the tools of the workshop and musical instruments, of which he had become fond. The fault of guardians and parents then, as now, was to neglect the natural bent of the youthful mind, and insist that the occupation assigned to young persons should be selected by considerations which have nothing to do with their natural bias. Young Thompson's apprenticeship was of short duration, and he returned to live with his mother, at Woburn, without having acquired a regular employment.

His self-reliance was his great characteristic. He seems never to have expected to avoid difficulties, and of course never sank in despondency. He had now become old enough to dwell with anxiety upon his future course in life, and although no flattering opening presented itself, devoted himself to the acquisition of useful knowledge. At about seventeen years of age, he attended lectures on natural philosophy at Cambridge, nothing deterred by a walk of nine miles from Woburn to Cambridge. His companion was another self-educated individual, Mr. (afterwards Col.) Loammi Baldwin, of Woburn, a distinguished engineer. His punctual attendance on these lectures laid the foundation of his extraordinary acquirements in the application of philosophical principles to the common wants of life.

Soon after this period, he commenced the business of teacher of the town school at Bradford, in the southern part of Essex county; and at the age of nineteen we find him engaged in the

same employment, in the town of Concord, N. H., where his fine personal appearance, and the ease of manner which he had acquired in his intercourse with educated men, recommended him to the favor of a lady of large property, the widow of Col. Rolfe, of Concord, which lady he married at this early age.

He was always of an ambitious turn, and in his intercourse with the world lost no opportunities of personal advancement, and by his new position in society he was enabled to make the acquaintance of public men, and procure the appointment of major of militia. But at the period of the commencement of the American Revolution, Major Thompson was thought to favor the royal cause. This imputation was a manifest injustice, as his conduct at that time and subsequently proves. His aspiring temper had led him to form an acquaintance with those who were above his condition in life, and these persons were principally British officers, in civil and military situations. The popular feeling at that time was particularly strong, and prejudices were easily engendered, and Major Thompson's protestations were unavailing to shield him from popular odium. It is much to the credit of his patriotism, that this unmerited treatment did not readily wean him from the American side of the struggle. He turned out with those who encountered the British troops at Lexington, and afterwards went into camp with the troops at Cambridge. He also sought to clear himself from suspicion by the action of a court of inquiry, who decided entirely in his favor, and pronounced him a friend of liberty.

At this time he turned his attention, with his

usual ardor, to military studies, and tried hard to obtain a commission under Congress in a company of engineers about being raised, where his talents and courage would, no doubt, have done honor to the appointment. But his efforts were unsuccessful. The appointment was given to a young man, the son of a distinguished engineer, Major Gridley, who had served in the old French war, and who was afterwards wounded at the battle of Bunker Hill, where he had the day before skillfully laid out the fortifications. At this engagement, his son commanded the only American artillery, in a manner for which he has been severely censured. Mr. Thompson met this disappointment in no very placable spirit, and having lost his wife by death, he embarked for England, to better his fortunes. His acquaintance with the English and royalist party enabled him to be the bearer of despatches to the English government. He was not slow to avail himself of his introduction to persons in power. Every person bringing intelligence from the revolted colonies was welcomed, and especially one who united so much intelligence and practical acquaintance with the detail of measures at the theatre of affairs, was cordially received. His introduction to men in power was of great service to him, and he soon was appointed to a secretaryship in the bureau of American affairs, in the colonial department.

Now began his prosperous life, when he found himself in a situation which drew forth his latent energy and talent. To these he added a most persevering industry and entire confidence in himself. His preparations for every undertaking were always fully made, and he seized upon op-

portunity with avidity. His name became known as a learned man and successful philosopher. He was chosen into the Royal Society, and contributed largely to their memoirs. The studies of that age were of a military character, and Mr. Thompson was distinguished in that department. At the age of thirty, he was made a colonel in the British service. His regiment was sent to this country just at the close of the war, and Col. Thompson gave evidence of his peculiar fitness for command, in the discipline of his troops. A few skirmishes at the south was all the service they were called to perform, and peace speedily caused their return; so that Col. Thompson, although he appeared at the very first and very last of the contest, was exempt from its material and more important struggle. He returned to England on half pay, and was knighted in 1784.

His military ardor was yet uncooled, and he left England to offer his services to the emperor of Austria, in his war against the Turks. On his way to Vienna, he accidentally encountered the future king of Bavaria, at a military review of his troops, at Manheim. His introduction was opportune, and the Duc de Deuxponts was inspired with confidence in his new acquaintance, by his conversation and fine personal appearance. He was in want of a person possessing the very talent Col. Thompson displayed, which caused his invitation to court, and his appointment to offices of trust and responsibility.

His first duty was to reform the discipline of the army, which he performed in a bold and satisfactory manner, so that order was established, economy promoted, and contentment prevailed.

Without relaxing discipline, he abolished useless formalities among the military, and employed the time thus gained, in teaching them and their children the rudiments of common learning; and here the system of common schools, as it prevails in New England, triumphed, as it has often done. Col. Thompson owed much of his success, to his familiarity with the town schools of his native land, which he had practically acquired by teaching. He established, besides the elementary schools of common learning, schools for *employment*, by which the soldier became no longer a drone, and mechanical automaton, but performed an amount of labor on the public works and highways, which contributed somewhat to repay his support by the State. An instance of his characteristic ecomomy appeared in his appropriating the paper used to teach writing in the military schools, to the manufacture of cartridges by the soldiery.

Col. Thompson's success with the military, encouraged him to extend his philanthropy to the mendicants, which overran the kingdom of Bavaria. They had long been a nuisance which the boldest reformers had given up in despair. They were so numerous, so bold, and so thoroughly lazy, that the scheme of making them useful members of society was considered most chimerical and absurd. They audaciously levied contributions on the public, and their systematized exactions were the terror of the bakers, butchers, brewers and shopkeepers of Munich and other cities, who usually compounded with them for a stipulated sum, or sort of black mail. The power of these mendicants was so formidable, that four regiments of cavalry were cantoned in different

parts of Bavaria, to overawe and control them, if necessary. All the arrangements were systematically appointed. A large building was provided, containing the necessary appliances for in-door labor of every mechanical kind, and as machinery had not superseded manual labor in so great a degree as at present, abundant employment for all, both old and young, was found in the various workshops, and in the manufacture of articles of wood, iron, leather, wool and cotton.

It might well require the energies of a man of genius to convert men, women and children, born beggars, into industrious artisans, and not only to abate a nuisance, but confer a positive benefit upon the depressed and outcast authors of it. Yet such was the miracle wrought by the energy, the philanthropy and the perseverance of Col. Thompson. His institution became celebrated as a model throughout Europe. He secured to himself a reward, in the grateful acknowledgements of those who were benefited by his labors, which he highly appreciated, and which rarely falls to the lot of philanthropists. This was the result of being governed in his labors by the law of kindness. Firmness, promptitude, and energy, characterized his movements, but harshness never. The sturdy beggars were arrested in the streets, by the civil officers; they were informed that begging was prohibited in Bavaria, and that employment, food and clothing would be furnished to all who needed them, and that those who were unable to work should be sent to the hospital. The well disposed eagerly embraced the opportunity offered, and the refractory saw no chance of resistance or escape. In the end, all were satisfied. Two principles, practically

applied, contributed mainly to his success. In the first place, he averred that since goodness and happiness were acknowledged to be inseparable, it was best to begin by making the poor *happy*, and then expect them to become *virtuous;* whereas the common fault was, to endeavor to instil lessons of virtue first, and expect the happiness to follow. In the second place, he roused their pride and encouraged their self-respect, by proclaiming that alms-giving was abolished, and caused it to be inscribed in large letters over the door of his institution, NO ALMS RECEIVED HERE. The pauperism of Bavaria soon lost its worst features, and although in all countries there must be provision for the poor, and the poor are always with us, appealing to our feelings of humanity and sympathy, yet by judicious arrangements, like those of Thompson, the debasing characteristics of systematic pauperism can be avoided. Col. Thompson speaks with enthusiasm of his success in accomplishing his plans. He describes with animation his visit to the workhouse at Munich, after an absence of fifteen months, and speaks of the fête he gave to nearly two thousand of the inmates, in the public gardens, of their solicitude and prayers for him while dangerously sick, and asks if any earthly reward can be greater than the satisfaction he received.

But substantial and pecuniary recompense was not wanting. So great were the benefits conferred on the state, and so various were the improvements he caused to be followed out, that the sovereign of Bavaria conferred upon him many appropriate honors. He appointed him his aide-de-camp, chamberlain, member of council, and

lieutenant general of his armies. He had been knighted in England, and as the laws of the Bavarian Electorate did not permit his receiving the same honor there, others were procured for him in Poland and Italy. During the temporary occupancy, by the Elector of Bavaria, of the place of Vicar of the Holy Roman Empire, his patron created him a count by the name of Rumford, in honor of Concord, New Hampshire, whose original name was Rumford.

He was now at the zenith of his fame, and was much employed by his writings, in diffusing the knowledge of his plans and his success throughout the world. Much of his philosophical writing, which was highly popular, and free from technicalities, was on the subject of heat, and laborious and expensive experiments were instituted, to ascertain the best mode by which a saving of fuel could be effected by the poor, in cooking their food and warming their houses. By his own statement, it appears that he was enabled, at his establishment, to prepare the food of 1000 persons for 12½ cents' worth of fuel, rating wood at $6,00 a cord. The ovens, which yet go by his name, are still in constant use, after a trial of fifty years. But the most important blessing he conferred on the poor, as an improvement in their food, was teaching them the value of the potato. Before Count Rumford's philanthropic efforts, the potato was almost an unknown plant, and regarded as a sort of luxury, but in his plan for improving the condition of the military, gardens were established at the barracks, which the soldiers owned as their private property, but were compelled to keep in order, while the produce they raised went

to improve the diet of their families. Count Rumford, by great exertions, succeeded in establishing the culture of this valuable root, and its use at length became general among all classes. Indian corn was another cheap article of food to which he directed the popular attention by his writings, which were enthusiastic as well as intelligible. The following extract from his essay upon food, will show the minuteness with which he entered into detail, and exhibits the curious instance of a great philosopher giving to the world a description of the best method of making hasty-pudding. "In regard to the most advantageous mode of using Indian corn as food, I would strongly recommend a dish made of it, that is in the highest estimation throughout America, and which is really very good and very nourishing. This is called *hasty-pudding*, and is made in the following manner: A quantity of water, proportioned to the quantity of pudding to be made, is put over the fire, in an open iron pot or kettle, and a proper quantity of salt, for seasoning; the salt being previously dissolved in the water, Indian meal is stirred into it, little by little, with a wooden spoon with a long handle, while the water goes on to be heated and made to boil, great care being taken to put in the meal in very small quantities, and by sifting it slowly through the fingers of the left hand, and stirring the water about very briskly at the same time with the wooden spoon in the right hand, to mix the meal with the water in such a manner as to prevent lumps being formed. The meal should be added so slowly, that, when the water is brought to boil, the mass should not be thicker than water-gruel, and half an hour more,

at least, should be employed to add the additional quantity of meal necessary for bringing the pudding to be of the proper consistency, during which time it should be stirred about continually, and kept constantly boiling. The method of determining when the pudding has acquired a proper consistency, is this: — the wooden spoon used for stirring it being placed upright in the kettle, if it falls down, more meal must be added; but if the pudding is sufficiently thick and adhesive to support the spoon in a vertical position, it is declared to be *proof*, and no more meal is added." He then describes the various additions with which it may be eaten, and cautions his European readers not to be prejudiced against it until they have tried it, "for," says he, "the universal fondness of Americans for it, proves that it must have some merit; for, in a country which produces all the delicacies of the table in the greatest abundance, it is not to be supposed that a *whole nation* should have a taste so depraved as to give a decided preference to any particular species of food which has not something to recommend it." His description of the mode of eating it smacks strongly of his early engineering studies. "The manner in which hasty-pudding is eaten, with butter and sugar or molasses, in America, is as follows: the hasty-pudding being spread out equally on a plate, while hot, an excavation is made in the middle with a spoon, into which excavation a piece of butter as large as a nutmeg is put, and upon it a spoonful of brown sugar, or, more commonly, molasses. The butter being soon melted by the heat of the pudding, mixes with the sugar or molasses, and forms a sauce, which being confined in the excavation

made for it, occupies the middle of the plate. The pudding is then eaten with a spoon; each spoonful of it being dipped into the sauce before it is conveyed to the mouth; care being taken in eating it to begin on the outside, or near the brim of the plate, and to approach the centre by regular advances, in order not to demolish too soon the excavation which forms the reservoir for the sauce."

Among all the honors which Count Rumford received, he valued none more highly than that of minister to the Court of London. There was the beginning of his fame, there the first place at which his talents had been appreciated and rewarded. Unfortunately, he was doomed to be disappointed. After his appointment by the Bavarian government to this post, he was informed that the rule of the English Court did not permit the office of ambassador near them, to be filled by a British subject, and that there could be no exception made to this rule, even to favor the claims of so acceptable a man as Count Rumford. This information met him in London, but did not cause him to quit the country. He remained among his old associates for some years, and his position afforded him a more convenient opportunity to disseminate his inventions and improvements. He was one of the leading men in founding the present Royal Institution of Great Britain, the purpose of which shows the character of his mind in bringing the achievements of science to the practical test of utility. This institution was chartered to diffuse the knowledge and introduction of useful inventions; and to teach the application of science to the arts, by means of public lectures.

At this period of his life his thoughts appear to have reverted to his native land, for the weal of whose institutions he had always shown an interest. He was repeatedly invited to revisit it, by individuals and government; but he never found himself at liberty to accept their invitation. He invested five thousand dollars in the American funds to establish a premium to be awarded by the American Academy of Arts and Sciences of Massachusetts, to the author of the most "important discovery or useful improvement, which shall be made and published by printing, or in any way made known to the public, in any part of the continent of America, or in any of the American Islands, during the two preceding years, on heat, and on light; the preference always being given to such discoveries as shall, in the opinion of the Academy, tend most to promote the good of mankind." A like sum was also presented to the Royal Society of Great Britain to be used by them for the same purpose, in order that he might contribute to the "advancement of a science which had long employed his attention, and which appeared to him to be of the highest importance to mankind." The sum invested in this country has never been employed to pay premiums, except in a single instance, and the fund has been constantly accumulating till it has quadrupled its original amount. The legislature of Massachusetts have empowered the American Academy to divert, in some degree, the interest of the capital from its original destination, and apply it to make additions to their library of works on the subjects of heat and light.

Count Rumford's ascendency at the Bavarian

Court, had no doubt given him some ideas of self-consequence, which did not accord with the freer atmosphere of Great Britain, where he was obliged to admit the co-operation, if not the equality, of associates in the same fields of science. From this or some other cause, he was involved in difficulties with the managers of the Royal Institution, whom he probably found less subservient than the savans of his former place of residence. Considerations of this sort probably, led him to the choice of another place of retirement, and he became a resident of France. His industry and researches still marked his character, although his domestic relations became less agreeable. He became united in marriage with the widow of the distinguished chemist, Lavoisier, and after discovering how little their dispositions were suited to promote each other's happiness, they separated by mutual agreement.

Count Rumford's death took place in August, 1814, at the age of 62, and was the occasion of an eulogy by the celebrated Cuvier, before the French Institute, to which body Count Rumford belonged. The university at Cambridge, Mass., was most gratefully remembered in his will, by which he bequeathed $1000 annually and the reversion of his estate, to found the present Rumford professorship, the object of which is, to teach the application of science to the useful arts, and which has been filled with distinguished ability.

It is interesting to observe in his researches how completely Count Rumford relinquished the warlike to cultivate the peaceful pursuits of mankind. His first experiments were instituted to calculate the force of projectiles, and the explo-

siveness of gunpowder; the later ones to cure smoking chimneys and determine the comparative warmth of different textures used for clothing, and to prove the superiority of broad-rimmed wheels. His whole soul seemed to enter into any scheme for administering to the wants of mankind, and his writings are particularly happy in the plain and graphic mode of explanation. His was not a mawkish sympathy, but an effective effort at amelioration. His success in life was a proud exhibition of New England character, and forcibly illustrates the value of self-dependence and perseverance. A faltering and indolent man would never have made use of his advantages, great though they were; and a lover of ease, contented with a moderate share of renown, would never have accomplished the high aims of Count Rumford. On the whole no man has better applied the maxim of Cicero, "I am a man and have an interest in every thing human."

BIOGRAPHICAL SKETCHES.

NATHANIEL BOWDITCH.

The profound study of mathematics, although regarded by the majority as dry and repulsive, has always excited great enthusiasm in its sincere votaries. And well it may; since its processes are so beautiful in their exactness, its results so certain, and, when applied in practice, often so astonishing. By the severity of its method, the mind is abstracted from every other object; the passions are held in abeyance; the attention is riveted to the demonstration; and the intellect, in some of its most independent operations, is surprised and delighted with unexpected discoveries. When Syracuse was taken by the Romans (B. C. 312), not even the din of arms, nor the confusion of a city given up to pillage, could divert Archimedes from the problem upon which he was intent. The philosopher was slain in the midst of his labors, with his rude diagrams before him. We can hardly cease to wonder, that from the smallest data the widest results may be calculated. The accuracy of the maps and charts of empires depends, perhaps, upon fixing the position of a single point. A beautiful illustration of the exactness of mathematical calculations, is

seen in the efforts to determine the difference between the polar and equatorial diameters of the earth. It has been said, that *with a base line of less than a quarter of an inch in length* (i. e. the excess of the polar over the equatorial pendulum), we can determine, *within the fraction of a mile*, the difference between the polar and equatorial radius of the earth.*

Sciences the most abstruse are sometimes found to be most really practical. The poor old man, whose failing eyes are made young again by his spectacles, little dreams, perhaps, of the various knowledge which was necessary in order to invent and construct the glasses. The captain of the vessel, who learns his latitude and longitude by an observation of the stars, may not remember what an acquaintance with the laws and motions of those distant bodies was necessary, before the rules and tables requisite for the observations could be formed. The reproach of neglecting the sciences and the arts, cast upon this country, for a time with justice, can now hardly be made good. Men have lived among us, as distinguished for learning as for practical skill. Twenty-four years ago, a writer in one of our ablest Reviews lamented that "while Great Britain could boast of more than thirty public and private observatories of considerable note, we had not in the whole United States one that deserved the name." That want is now, to a very considerable extent, supplied by public and private munificence. Astronomical observatories have been established at many of our colleges, in several of our large cities, and at the

* Mr. Pickering's Eulogy on Dr. Bowditch, p. 68.

seat of government, in Washington. The liberal contributions for the purchase of libraries and philosophical apparatus in some of our colleges, and the encouragement given to some of our painters and sculptors, show that the sympathies of considerable portions of the community are not expended upon works of the lowest practical utility alone, nor upon the mere acquisition of wealth; or rather, that the enlargement of the sphere of our knowledge, and the cultivation of a pure and refined taste, are themselves considered of the greatest utility, and as constituting our most certain wealth.

He who has added to the purely scientific reputation of his country, deserves to be gratefully remembered. The subject of the following sketch did more, perhaps, in this respect, than any American of his time; and, in addition to his great scientific attainments, was remarkable for his practical skill. It does not always follow, that profound acquisitions in science are accompanied by a sound judgment in the ordinary affairs of life. It would sometimes seem as if the habit of dealing habitually and almost solely with fixed quantities, injured one's power of judging sagaciously concerning creatures so variable and fickle as men. La Place himself, when placed by Bonaparte in stations of high political responsibility, was found incompetent to the discharge of his duties. Dr. Bowditch's practical ability was equal to his knowledge; and his profound mathematical and astronomical knowledge was so applied, as to become subservient to the most common necessities of society. His science, however removed, it might at first seem, from the ordinary business of men,

really enabled him to furnish them with the means of conducting that business most safely and profitably. By his personal attention and efforts, he wisely and prosperously directed an institution which held under its control millions of dollars, entrusted to it by those whose circumstances would not allow them to manage their own property. At the same time, by his *mind*, he was navigating tens of thousands of ships, all over the world, freighted with untold wealth, and with lives still more precious.

Nathaniel Bowditch, the fourth of seven children, was born in Salem, Mass., March 26th, 1773. His ancestors for several generations were shipmasters; but his father, having met with misfortunes in business at the commencement of the revolutionary war, was so far disheartened as to give up his profession, and adopt the trade of a cooper. At the age of ten, young Bowditch lost his mother, to whose instruction he always felt under great obligations. He always spoke of her with the greatest affection. She early taught him to love truth; and never, on any account, to tell a lie. She also inculcated upon him a reverence for things sacred. Before the death of his mother, he had attended school for a short time, and his predilections for the favorite studies of his mature years began early to show themselves. It is stated, that having with some difficulty obtained permission from the schoolmaster to study arithmetic, a difficult sum was given him, apparently for the purpose of rebuking his too eager desire. He took it to his seat, nowise discouraged, and soon, having conquered the difficulty, brought it up with a shining face to the master. Instead,

however, of the approbation he expected, he was accused of endeavoring to deceive, by pretending to have done what another had done for him. Nor was he credited when he asserted that he did it himself; and the impatient teacher would have proceeded to punish him, if an older brother had not interfered and fortified the assertion of Nathaniel by his own testimony. This circumstance — especially his being charged with falsehood — was one of those which Dr. Bowditch could never forget.

The benefit of the school, whatever it may have been, he was soon compelled to forego, on account of poverty; and, at a little more than ten years of age, he was bound as an apprentice to Messrs. Ropes & Hodges, who were ship chandlers. While with them, he evinced more decidedly a taste for mathematics; and, indeed, devoted his leisure moments with great earnestness to reading and study. He kept his slate and pencil by his side in the shop, and, when not engaged in serving customers, was busy in his favorite pursuit. One visiter prophesied "that if he kept on ciphering so, he would, without doubt, in time, become *an almanac maker.*" Another, having once entered the shop when Nathaniel was engaged in his common arithmetical labor, while his fellow-apprentice was asleep behind the counter, smiled and said, "*Hogarth's Apprentices.*" Frequently, after the store was closed at night, he remained until nine or ten o'clock, occupied with his books. His holidays were usually spent in the same manner. In the house of his master, he had a room in the garret, which he used during the summer as a study; while in the winter, he

made a corner by the kitchen fire serve the same purpose. He rose very early in the morning, — a habit which he retained through life; and he often declared that those early hours gave him, substantially, his knowledge of mathematics. When he was fourteen, he made an almanac, which still exists in manuscript, and is considered among the most interesting volumes of his library. At this period of his life, also, he gained his first knowledge of algebra. His brother William returned one day from school, with the tidings that the master had a new method of ciphering, by means of letters. Nathaniel was puzzled and extremely interested by this announcement, and could not rest till his brother had borrowed the book for him. It is said, that he did not sleep the night after he had obtained it.

Although such a diligent student of mathematics, he did not confine his attention to them. It was about this time that he read through Chambers's Cyclopædia, in two large folio volumes. There was also in Salem a very good library. By a singular series of events, the books of Dr. Kirwan, a learned Irishman, were transferred to America, — the owner not consenting thereto, and, indeed, not being consulted on the subject. They were captured by a privateer, in the Irish Channel, brought to Beverly, and being bought on reasonable terms, by persons at Salem, formed the foundation of what afterwards became the Salem Athenæum. At a subsequent day, compensation was offered to Dr. Kirwan for his loss; but he generously declined to take it. To this library young Bowditch gained access, and borrowed from it many volumes which were of the

greatest consequence to him. Among them were the Transactions of the Royal Society of London, from which he copied a large number of the most important mathematical papers. Scientific works, also, which his limited means would not allow him to purchase, he obtained in the same laborious way; and these products of his diligence and learning, still exist, in more than twenty folio and quarto volumes. We doubt whether there was ever a more earnest devotion to a branch of science frequently repulsive to the young on account of the constant and patient attention which it requires. Two of the volumes contain, according to the title-page of one of them, "A Complete Collection of all the Mathematical Papers in the Philosophical Transactions; Extracts from various Encyclopædias, from the Memoirs of the Paris Academy; a Complete Copy of Emerson's Mechanics; a Copy of Hamilton's Conics; Extracts from Gravesande's and Martyn's Philosophical Treatise, from Bernouilli, &c. &c."

When his employers, Messrs. Ropes & Hodges, retired from business, young Bowditch entered the store of Mr. S. C. Ward. The same habits of study went with him. He began to learn Latin, without an instructor, in order to read Newton's Principia. This book he finally mastered, and, it is said, translated into English, while with Mr. Ward. No complete translation is now among his papers; but portions of this great work, rendered into English, are in the manuscript book before spoken of. It may be, therefore, that the above remark of one of his early acquaintances is not entirely correct.

As he learned Latin in order to read one pro-

found mathematical treatise, so he learned French in order to read another. By the strong advice of his teacher, although against his own first inclinations, he learned the pronunciation, as well as the forms and construction; and it was not long before the value of this part of the language, which he had intended to omit, was made most evident. In one of his first voyages to a French port, he happened to be the only one on board who could act as an interpreter. He was impressed by this circumstance with the belief, that no knowledge can come amiss to a man. However unnecessary or unprofitable it may seem at the hour of acquisition, there will some time or other be a use for it. We will mention here another incident illustrating the same fact, although it occurred at a later period of his life. In one of his voyages to Spain and Portugal, he acquired a knowledge of the Spanish. After he had ended his seafaring life, he was applied to by an old sea captain to translate an important paper which he had received. It was in Spanish, and no one else in Salem was sufficiently acquainted with the language. Mr. Bowditch very gladly made the translation; and this small assistance, thus opportunely given, was one cause, through the influence of the captain, of the subsequent election of Mr. Bowditch to the Presidency of the Essex Fire and Marine Insurance Company.

Soon after entering the employment of Mr. Ward, his love of science attracted the attention of the Hon. Nathan Reed, at that time an apothecary, in whose shop, as an assistant, was one of Mr. Bowditch's schoolmates and friends. With this schoolmate, he used occasionally to spend his

evenings, — studying the scientific books which he found there.*

There is much truth in the old adage, "Where there is a will, there is a way." If the mind be firmly determined upon a course, not absolutely extravagant, the difficulties in the path will be likely to vanish before a vigorous resolution and constant energy. Men are seldom unlucky but by their own fault.† Those who accomplish any thing great in the world must generally depend upon themselves, and not upon external circumstances.

> "The fault, dear Brutus, is not in our *stars*,
> But in *ourselves*, that we are underlings."

Dr. Bowditch was never accustomed to think that the difficulties he encountered in early life really retarded his progress. Necessity was a stern master, but, he thought, the best. He was taught

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* It is mentioned by one of the eulogists of Dr. Bowditch, as an interesting fact, that the same shop was the place resorted to by Count Rumford (then Benjamin Thomson, and a clerk in John Appleton's store), to make his experiments on gunpowder. — See note to Judge White's Eulogy on Mr. Bowditch.

† Dr. Bowditch "always was of opinion, that continued ill-luck indicated incapacity. On one occasion, when he had refused to underwrite upon a vessel commanded by Mr. A. because 'he was unlucky,' the captain called upon him to complain of his imputing to him as a fault what was but a misfortune; and, after trying for some time to evade a direct reply, Dr. Bowditch at last said, 'If you do not know that when you got your vessel on shore on Cape Cod, in a moonlight night, with a fair wind, you forfeited your reputation as an intelligent and careful shipmaster, I must now tell you so; and THIS IS WHAT I MEAN BY BEING UNLUCKY.'" — *Mem. prefixed to vol. 4 of Translat. of Mec. Cel.* p. 84.

by it to depend upon himself, while yet he despised no assistance which he could derive from others. In overcoming obstacles, he acquired an elasticity of spirits, which enabled him, as much as any thing could, to succeed in still greater undertakings. "The successful accomplishment of the arduous task of translating the 'Principia,'" says Mr. Reed, "probably induced him to commence the translation of 'La Place.'" The vigor and diligence with which he applied himself to scientific pursuits gained him the friendship and assistance of those who were both willing and able to help him. Among these, besides Mr. Reed, were Drs. Bentley and Prince. The Philosophical Library was kept at the house of the latter of these gentlemen, who received the youthful student at all times with the greatest kindness, and rendered him all the assistance in his power.

In 1794, Mr. Bowditch, whose reputation for knowledge and fidelity was thoroughly established, was employed, in company with Mr. John Gibaut, to make a thorough survey of the town of Salem. This task was performed very satisfactorily, and with it may be considered as ending the first epoch of his life. He had now arrived at the verge of manhood, with greater mathematical attainments, probably, than any one of his age in the state, with a character unsullied, enjoying the entire confidence of his employers, and with good purposes and resolutions for the future.

In the year 1795, he engaged to sail with his friend Capt. Gibaut on a voyage to the East Indies. Before the vessel sailed, Capt. Gibaut relinquished the command, and his place was taken by Capt. Prince. This made no difference

with Mr. Bowditch, who sailed as clerk. They went to the Isle of Bourbon, where they remained five months, and returned to Salem after exactly a year's absence. His second, third, and fourth voyages were made with the same captain. During these voyages he employed his leisure time, which was considerable, in mathematical studies, or in learning such languages as he thought would be of value to him, or in profitable reading. He thus perfected himself in French, and acquired a good knowledge of Italian, Spanish, and Portuguese. It may as well be mentioned here, that his method of learning a new language was generally to obtain a New Testament in the language, and, with the aid of a dictionary, to commence immediately the work of translation. At the age of forty-five, he learned the German, for the sake of reading certain mathematical works. His library, at his death, contained the New Testament in more than twenty-five languages, and the dictionaries of a still larger number.

During his long voyages he was not only desirous of learning, but very willing to teach. He diffused among the sailors an eager desire for nautical information. As a natural consequence, it is stated, that a large number of those who sailed with him became afterwards masters or chief mates of vessels. To many ship owners, it was the best recommendation of a seaman, that he had been a voyage with Mr. Bowditch. In one ship in which he went to the East Indies, it is said that every sailor on board could work a lunar observation. On one occasion, Capt. Prince says, the supercargo asked him to go forward, and see what the sailors were talking about. "They went

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forward accordingly, and the captain was surprised to find the sailors, instead of spinning their long yarns, earnestly engaged with book, slate, and pencil, and discussing the high matter of tangents and secants, altitudes, dip, and refraction. Two of them in particular were zealously disputing; one of them calling out to the other, 'Well, Jack, what have you got?' 'I've got the *sine*,' was the answer. 'But that aint right,' said the other; '*I* say it's the *cosine*.'"* The ship became thus a school of learning, and every sailor felt himself elevated by belonging to it. To Mr. Bowditch it was a pleasure and a recreation thus to teach those willing to learn. He always felt that he was in this way laying the best foundation for their future success in their perilous profession. On the arrival of the ship at Manilla, a Scotchman named Murray, expressed his surprise, that the Americans, with the slight knowledge of navigation which he supposed them to possess, should undertake so long and dangerous a voyage, working their way to the island, by dead reckoning, in face of the north-east monsoon. Capt. Prince told him in reply, that he had twelve men on board, each of whom was as well acquainted with working lunar observations, for all practical purposes, as Sir Isaac Newton himself. A broker who was present said to Murray, "If you knew as much as I do about that ship, you would not talk quite so glib." "And what do you know?" said Murray. "I know," returned the broker, "that on board that ship there is more knowledge of

* Rev. Mr. Young's Discourse.

navigation than there ever was in all the ships that ever came into Manilla bay." *

During the same voyage, while they were at Madeira, Mr. Bowditch had been called upon to show his mathematical knowledge. A wager was laid between a gentleman in the port and the captain of the ship, that the young mathematician could not do a certain sum. The sum (so called) was this: To dig a ditch round an acre of land, of a given shape, — how deep and how wide must

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* The Rev. Mr. Young has translated an anecdote from the *Correspondance Astronomique* of Baron Zach, a very distinguished European astronomer, which is so interesting that we think every reader will be gratified to see it. "The Baron is relating the sensation caused at Genoa by the arrival there, in 1817, of that splendid packet, the *Cleopatra's Barge*, owned by George Crowninshield, Esq., of Salem. He says that he went on board with all the world, "and it happened," to use his own words, "that, on inquiring after my friends and correspondents at Philadelphia and Boston, I mentioned, among others, the name of Mr. Bowditch. 'He is a friend of our family and our neighbor at Salem,' replied the captain, — a smart, little, old man; 'and that young man whom you see there, my son, was his pupil; in fact, it is he, and not myself, who navigates the ship. Question him a little, and see if he has learnt any thing.' Our dialogue was as follows: 'You have had an excellent teacher of navigation, young man; and you could not well help being a good scholar. In making the Straits of Gibraltar, what was the error in your reckoning?' The young man replied, 'Six miles.' 'You must then have got your longitude very accurately: how did you get it?' 'First by our chronometers, and afterwards by lunar distances.' 'What! do you know how to take and calculate the longitude by lunar distances?' The young captain seemed somewhat nettled at my question, and answered me with a scornful smile, — '*I* know how to calculate the longitude! why, our *cook* can do *that!*' 'Your *cook!*' Here the owner of the ship and the old captain assured me that

it be, to raise the acre of land one foot? The problem was solved in a very few minutes.

Mr. Bowditch's life on shipboard was as methodical and as diligent as on shore. "His practice," says a companion during several voyages, "was to rise at a very early hour in the morning, and pursue his studies till breakfast; immediately after which, he walked rapidly for about half an hour, and then went below to his studies till half past eleven o'clock, when he returned and walked

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the cook on board could calculate the longitude very well, that he had a taste and passion for it, and did it every day. 'There he is,' said the young man, pointing with his finger to a negro at the stern of the ship, with a white apron before him, and holding a chicken in one hand, and a butcher knife in the other. 'Come forward, Jack,' said the captain to him; 'the gentleman is surprised that you can calculate the longitude, — answer his questions.' I asked him, 'What method do you use to calculate the longitude by lunar distances?' His answer was, 'It's all one to me; I use the methods of Maskelyne, Lyons, Witchel, and Bowditch; but, upon the whole, I prefer Dunthorne's. — I am more used to it, and can work it quicker.' I could not express my surprise at hearing this black face talk in this way, with his bloody chicken and knife in his hand. 'Go,' said Mr. Crowninshield to him, 'lay down your chicken, bring your books and your journal, and show the gentleman your calculations.' The cook soon returned with his books under his arm. He had Bowditch's Practical Navigator, The Requisite Tables, Hutton's Tables of Logarithms, and the Nautical Almanac. I saw all this negro's calculation of the latitude, the longitude, and the true time, which he had worked out on the passage. He answered all my questions with wonderful accuracy, not in the Latin of the caboose, but in good set terms of navigation. This cook had been round the world, a cabin boy, with Capt. Cook on his last voyage, and was well acquainted with the particulars of his assassination at Owhyhee, on the 14th of Feb. 1779." *Rev. Mr. Young's Discourse*, p. 28.

till the hour at which he commenced his meridian observations. Then came dinner; after which, he was engaged in his studies till five o'clock; then he walked till tea time; and, after tea, was at his studies till nine o'clock in the evening. From this hour till half past ten o'clock, he appeared to have banished all thoughts of study; and, while walking, he would converse in the most lively manner, giving us useful information intermixed with amusing anecdotes and hearty laughs, making the time delightful to the officers who walked with him, and who had to quicken their pace to accompany him. Whenever the heavenly bodies were in distance to get the longitude, night or day, he was sure to make his observation once, and frequently twice, in every twenty-four hours; always preferring to make them by the moon and stars, on account of his eyes. He was often seen on deck at other times, walking rapidly, and apparently in deep thought; and it was well understood by all on board, that he was not to be disturbed, as we supposed he was solving some difficult problem; and when he darted below, the conclusion was, that he had got the idea. If he were in the fore part of the ship when the idea came to him, he would actually run to the cabin, and his countenance would give the expression that he had found a prize." *

From this account it appears that, without neglecting the immediate duties of his calling, his strong tastes and affections were towards *science*. He was thirsting for knowledge. He did not profess to be much acquainted with what is usually

* Judge White's Eulogy.

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called *seamanship*, although his knowledge and skill, under every emergency, showed themselves equal to the greatest task imposed upon them. During the last voyage in which he went as captain, he determined to leave the greater part of the duties usually expected of commanders, to the officers under him, and made an express agreement with them for this purpose. He was thus enabled to secure a much larger portion of time for his cherished studies than would otherwise have been possible.

Let us look for a moment at some of the results of those studies. The book on Navigation once in general use among sailors was the work of John Hamilton Moore, — a work, says Pickering, made up partly from Robertson's Elements of Navigation, and from the well-known Requisite Tables of Dr. Maskelyne, formerly Astronomer Royal in the Observatory at Greenwich. During his first voyage, Mr. Bowditch had discovered in it many errors, some of which were of a very dangerous nature. One of these consisted in marking the year 1800 as a *leap* year, which affected the numbers so as to make a difference of twenty-three miles in the reckoning. This mistake was the cause of the loss of several vessels, and the imminent danger of many more. One edition of this work had already been published in America, and another was in preparation, when the publisher, Mr. Blunt, of Newburyport, heard that Mr. Bowditch had made important corrections, which he would be willing to communicate. He accordingly applied to the young navigator, and received from him assistance which prevented the loss of the whole edition. In accordance with the

request of the publisher, Mr. Bowditch devoted himself, during his third voyage, to the severe task of carefully examining all the tables of the work. In order to test their accuracy, he actually went through all the calculations necessary to an independent knowledge of what he was revising. In this wearisome process, "no less than *eight thousand* errors were discovered and corrected in the work of Moore, and above *two thousand* in the Requisite Tables." Of the last-mentioned errors, Mr. Bowditch remarks, that "although they would not seriously affect the result of any nautical calculation, yet since most of the tables are useful on other occasions, where great accuracy is required, it is not useless to have corrected so many small errors."

In the course of his labors he found the task so arduous that it seemed to him, on the whole, better to make a new work than to improve the old. As the result of this determination, Mr. Bowditch published, in 1802, the first edition of his "Practical Navigator." Thus, at the age of twenty-nine, had he prepared a volume which has been of incalculable service to the interests of navigation. It has never been superseded by its rivals, and is said to be extensively used in the British and French navies. In the subsequent editions, of which eight were published, the author endeavored to make the work as complete and useful as possible. The greatest care was used in the correction and prevention of mistakes; and by the last edition (that of 1837), "the body of the tables was increased from thirty-three to fifty-six."

The work, when first published in America,

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was immediately republished in England, under the editorship of Thomas Kirby. It was soon attacked by a British writer (Dr. Mackay, who had himself published a work on navigation), on the score of its many inaccuracies. Dr. Bowditch replied to this charge, in the next edition of his work, that not *one* of those many inaccuracies was to be found in the *American* tables; thus leaving as the only inference to be drawn, that the errors were to be charged upon the English editor or the English printer. As a farther vindication, however, although none was necessary, he went on to say, that "It is so difficult to obtain perfect accuracy in a table depending solely on observations, that no one ever published was perhaps entirely free from error. As a proof of this assertion, we may refer to the table published in London, in 1802, by order of the Commissioners of Longitude, in the third edition of the *Requisite Tables*, which table is esteemed as accurate as any published; for in it the latitude of Sandy Hook is nearly four degrees too much, and that of Barbuda nearly fifteen miles too much; the last error being common to almost all books and charts..... If farther proof of the justness of the remark, that errors exist in all tables of latitudes and longitudes, were wanting, it might be obtained by inspecting the table published at London, in 1804, in *The Complete Navigator*, by Dr. Mackay, in which are many similar errors; three of which only will be mentioned, viz. — Cape Ann Lights are laid down eleven miles too far to the northward, and are placed several miles to the westward of Salem, instead of the eastward; Barbuda is placed fifteen miles too far to the northward; and

Atwood's Keys nearly a hundred miles too far south: so that the remark made by Dr. Mackay in the preface to his work, 'that the case of the seaman who has to trust to such tables is truly lamentable,' might, with equal justice, apply to his own table." *

Although the *Practical Navigator* gained for its author such wide-spread reputation, and was so eminently useful, he did not rest his *scientific* fame upon it. It is an interesting fact, that he received from his publisher the *Mécanique Céleste*, as part of the payment for this work on navigation. A pleasant anecdote from the memoir of his life, prefixed to the fourth volume of the translation of the great work of La Place, may well conclude what we have to say upon his first distinguished effort at authorship. "Two young men came into the shop of his bookseller to purchase a copy of the *Navigator*. Upon being shown one bearing on its title-page the number of the edition, and purporting to have been revised and corrected by the author, one said to the other, 'That is all a mere cheat; the old fellow must have been dead years ago!' They were astonished and perhaps a little embarrassed at being introduced to an active, sprightly gentleman, in full health and good spirits, as the author of this work, which they had known from their earliest entrance upon a sailor's life."

Such being the intrinsic value and the wide utility of the work of Mr. Bowditch, it was a fitting tribute to his memory, that, at the news of his death, the flags were hoisted at half-mast in many of our cities, and by American vessels, as well as

* Pickering's Eulogy, note C.

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by many English and Russian, in Cronstadt; and that a badge of mourning was adopted by the pupils of the naval school of the United States.

With his fourth voyage, Mr. Bowditch ended his life as a seaman. He had become known as an uncommon mathematical scholar, and was attracting the notice of men, whose friendship he greatly prized. Among these was Chief Justice Parsons, who was himself distinguished for attainments in the higher branches of mathematics, as well as for a profound acquaintance with the science of law. In 1799, he was chosen a member of the American Academy of Arts and Sciences. At the beginning of his last voyage in 1802, while his ship was wind bound at Boston, he attended the commencement at Harvard University, and was surprised and delighted to hear his own name pronounced at the close of the exercises as one of those upon whom was conferred the honorary degree of Master of Arts, — an honor which he had fairly won by unaided efforts. It was the first of the acts of that distinguished University publicly recognizing his merits. She afterwards gave him more substantial tokens of esteem; but he ever looked back with the greatest satisfaction to this earliest and entirely unexpected proof of the regard in which he was held.

On the 25th of March, 1790, Mr. Bowditch married Elizabeth Boardman. Soon after he sailed on his third voyage, and before he returned, his wife was no more. She died at the age of eighteen.

In 1800, he was again married to his cousin, Mary Ingersoll, — the honored wife who lived with him more than thirty-three years, always

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encouraging him in his studies, and willing to make any sacrifices for his prosperity and fame. To her precious memory he subsequently dedicated the great translation and commentary, by which his name will be handed down to the distant generations of scholars.

Soon after the close of his seafaring life, Mr. Bowditch, as has been said before, was chosen President of the Essex Fire and Marine Insurance Company, in which office he remained nearly twenty years. His skill in the management of its concerns during this long period, which included some difficult crises in commercial affairs, is sufficiently shown by its uniform prosperity. The stockholders received for their investments an average annual dividend of ten or twelve per cent., and the institution, when he left it to remove to Boston, had a large surplus of profits on hand. For this situation, his affability, regular habits, sagacity, and strict integrity, no less than his great scientific attainments, remarkably fitted him. He was continually in contact with men of great variety of character, and elicited from all an involuntary respect for his learning and skill. His love of justice and truth was among the strongest of his characteristics, and he had occasion sometimes to exhibit them in connection with the business of his office. No man could expect any favor from him merely because he was rich, nor hope to control the affairs of the institution so as to benefit himself to the injury of a poor man. A person of great wealth once endeavored to force him to do an act which he thought would be injurious and unjust to another of smaller property, and, on his objecting, made mention of his own riches, and

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intimated that he would have his way. "No, sir, you wont," said Mr. Bowditch; "I stand here in this place to see justice done, and, as long as I am here, I will defend the weak."

During his residence in Salem, he was constantly interested in the public institutions of the city. Among these was the Salem Athenæum, which rose from the combination of the Social Library and the Philosophical Library. By the union, effected in part by his efforts, the value and usefulness of both were greatly increased.

Another, and the most peculiar, institution of the town, is the Salem East India Marine Society, whose museum is one of the chief attractions to strangers. This Society is composed of those who have sailed beyond Cape Horn or the Cape of Good Hope as captain or supercargo. The museum consists, mainly, of articles of curiosity collected from the most distant parts of the world, arranged with great taste and skill, in a large hall erected for the purpose. The collection is unique, and, as Mr. Bowditch says in his will, affords "a proof alike of the enterprise, taste, and liberality, of such of the citizens of Salem as have followed a seafaring life." Besides collecting curiosities, the Society aims to obtain and diffuse nautical information. This important object is said to have been suggested by Mr. Bowditch himself. "A blank book is furnished to each member, uniformly prepared for recording facts and observations during each voyage; and, upon the return of the vessel, it is deposited with the Society. It is then examined by a committee, who select and record in other volumes, having a convenient index for reference, all that they consider important; and

the result is a mass of nautical information, such as, probably, exists nowhere else in the world, and which Dr. Bowditch found of great service in preparing for the press the various editions of the *Practical Navigator*." Of this Society he was, at different times, Inspector of its Journals, Secretary, and President; and his full-length portrait now hangs in its great hall.

Although these duties seemed to occupy his time, yet he found leisure to pursue his favorite studies. In company with two others, soon after his return from his last voyage, he made a very accurate and complete survey of the harbors of Salem, Marblehead, Beverly, and Manchester. In the chart constructed from the results of this survey, the old landmarks, known only to the pilots, were laid down with such accuracy as to excite among them general surprise, and almost a fear for their occupation.

His manner of life while in Salem was very methodical, and varied little from one day to another. He rose at six, and walked a mile or two, either before breakfast or immediately after; at nine went to his office, where he remained till one. Then he walked again before dinner; and after dinner frequently took a short nap, and again went to his office until tea-time. From tea-time till nine in the evening, he was at his duties, and amidst business. Notwithstanding this regularity of public employment, he found time for the various duties of friendship, as well as the pursuits of science. In 1818 he became trustee for managing an estate of nearly half a million of dollars. He found time to instruct several young ladies in French, and others in Italian. Widows and

orphans came to him for sympathy and help, and were sure to receive it. He was indeed an illustration of the remark, that if you need any thing done you must apply to a busy man; an idle person seldom can find time to do any thing but be idle. Almost every one has found something like this in his own experience.

It is time that we indicate some results of his scientific pursuits while at Salem. "Before nine o'clock in the morning," he used to say, "I learned all my mathematics." Although this may be true, yet then, as ever afterwards in life, he was accustomed to carry some of his books with him to his office, and, if a moment of leisure occurred, would relieve himself from more irksome duties by studying them. During his residence at Salem, he contributed twenty-three papers to the several volumes of the Transactions of the American Academy of Arts and Sciences. Many of these were purely mathematical; most of them, astronomical. Among them is an interesting paper on the height, direction, velocity, and magnitude of the meteor which exploded over Weston, Conn. Dec. 14, 1807. Another, which, from a want of the improved methods of calculation used at present, involved immense labor, is on the elements of the orbit of the comet of 1811. One of his biographers remarks, that "the original manuscript volume containing his calculations, now preserved in his library, has one hundred and forty-four folio pages of close figures, probably exceeding one million in number, though the result of this vast labor forms but a communication of twelve pages." Another, on Dr. Stewart's formula for computing the motion of the moon's apsides, as given in the Supplement

to the Encyclopedia Britannica, is interesting, as showing that the method, although sanctioned by some of the most distinguished astronomers of Europe, was true in the particular case only, and, as a general method, entirely fails. Besides these articles, many others were written by him during the same period, and published in the Monthly Anthology, the North American Review, and Silliman's Journal. Among these, two papers in opposition to the proposal of a Mr. Lambert for the "establishment of a first meridian for the United States, at the permanent seat of their government," had probably considerable influence in defeating the project, and Greenwich still remains the first meridian for all who speak the English language. These papers subjected him to a silly charge of "zeal for the honor of the British nation," — a charge which can only find a parallel for absurdity in that narrow jealousy of American honor, which will not allow that the mother country is superior to us, or more fortunate, in any respect whatever; and which is apt to accuse him, who may chance to think so, with want of patriotism, if not with actual corruption. The North American Review for April, 1825, contains a very comprehensive article by Dr. Bowditch, upon modern astronomy. In one of his articles, published previously in the same review, the interesting fact is stated, that "out of *thirteen* primary planets and satellites, discovered since the year 1781, we are indebted to persons born in Germany for *twelve*, and that, in the determination of the orbits of these new bodies, they have done more than all the other astronomers in the world." Mr. Bowditch was also a contributor to the Annalist

and Mathematical Diary; and, it is said, solved every question proposed in that work. He also wrote several articles for the American edition of Rees's Cyclopedia.

But the great work on which he rested his fame for scientific knowledge was the translation of La Place's *Mécanique Céleste*, and the commentary with which he accompanied it. La Place was the son of a simple peasant of Normandy, and from his earliest years was remarkable for his intense love of study. At the age of eighteen, he visited Paris, and made himself known to the learned men of that metropolis by some profound essays upon certain difficult points in mechanics. The result was that in a few days he was appointed professor of mathematics in the public military school. From this time to the end of his life, he was constantly occupied with the science which he loved. His greatest work was the *Celestial Mechanics*. It was "the fruit of incessant meditation upon the great subjects of it, for more than sixty years, and under circumstances the most favorable that could fall to the lot of man; the author having the entire command of his time, and being surrounded by all the scientific men of France, who could render him any aid in their respective departments. If an observation in astronomy was required, — if any experiment in meteorology, in chemistry, in mechanics, — if laborious calculations were wanted in mathematics, in order to verify his theories, — the most eminent men in France, at the most advanced period of human knowledge, may be truly said to have been at his command; some of them, indeed, literally so, by orders of the government; and others, from

that common zeal in the cause of science, which is always glowing in such a community." *

The first volume of La Place's work was published in 1799, and the fourth in 1805. Shortly before his death, about twenty years afterwards, he published the fifth and last volume. It is undoubtedly the greatest and most important mathematical work written since the *Principia* of Sir Isaac Newton. Its object is to explain the whole mechanism of the heavens on strict mathematical principles; to demonstrate that all the apparent anomalies and irregularities in the forms and motions of the planets are in accordance with fixed laws. "Towards the end of the seventeenth century," he says in his preface, "Newton published his discovery of universal gravitation. Mathematicians have, since that epoch, succeeded in reducing to this great law of nature all the known phenomena of the system of the world, and have thus given to the theories of the heavenly bodies and to astronomical tables an unexpected degree of precision. My object is to present a connected view of these theories, which are now scattered in a great number of works. The whole of the results of gravitation upon the equilibrium and motions of the fluid and solid bodies, which compose the solar system and the similar systems existing in the immensity of space, constitute the object of *Celestial Mechanics;* or, the application of the principles of mechanics to the motions and figure of the heavenly bodies. Astronomy, considered in the most general manner, is a great problem of mechanics, in which the elements of

* Pickering's Eulogy.

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the motions are the arbitary constant quantities. The solution of this problem depends, at the same time, upon the accuracy of the observation, and upon the perfection of the analysis. It is very important to reject every empirical process, and to complete the analysis, so that it shall not be necessary to derive from observations any but indispensable data. The intention of this work is to obtain, as far as may be in my power, this interesting result."

No one of the natural sciences fills its student with such exalted emotions, or raises his thoughts so far above the meaner things of earth, as astronomy. None requires so extended a range of observation, so profound thought, so various and intricate calculations, to comprehend and demonstrate its laws; and no other knowledge can fill the mind of the unlearned beholder with such wonder and awe. The laws of mechanics, of chemistry, of medicine, are indeed wonderful; but any one can see how they are investigated. The subjects are in our hands; we can try them by such tests as we please, and make the results evident by what we call the simplest and most unmistakable proof. But to weigh the stars in scales; to predict the very moment when the moon shall veil her face; and foretell to a minute when the sun, a hundred years hence, shall be turned to darkness; and when the fiery comet, which dashes so fiercely through the heavens, coming we know not whence, and going we know not whither, shall, after wandering years upon years beyond all mortal sight, again come back to render obedience to the sun; — this seems to the uninstructed akin to omniscience, and to the learned

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is as interesting and solemn an exhibition as can be of the mysterious powers of the spirit within us. Hence in all ages the study of astronomy has awakened intense enthusiasm ; and those have been reckoned among the greatest luminaries of science, who have propounded the laws of the heavens.* That results so vast, so complicated, so wonderful, could be accounted for by a single law, — a law as necessary for explaining the minutest phenomenon of every-day life, as for explaining the motions of the heavens, — was the discovery of the great Englishman, Newton. The more various, complete, rigid application and demonstration of the law was left for the great

* Since writing the above, a discovery has been made of such extreme interest, that we do not hesitate to give an account of it, mainly in the words of Prof. Loomis of the New York University. It seems that the planet Herschell, or, as more commonly called, Uranus, was long known as a *star* before it was recognized as a *planet*. In constructing tables for this planet, astronomers found it impossible to represent its motion correctly. The discrepancies between the tables and the motion as determined by observation were so great, that some began to doubt whether the law of gravitation, at such a distance from the sun, was strictly true. "In a paper read before the French Academy of Sciences on the 31st of August, 1846, M. Le Verrier demonstrated that all the observations of Uranus since 1690 could be perfectly represented by supposing the existence of a planet at a great distance beyond Uranus; and he proceeded to assign its precise magnitude and position. Its distance from the sun was 3,500 millions of miles ; it made one revolution in 217 years; and its weight was thirty-eight times that of our earth. He assigned its present position near the star Delta Capricorni; its brightness about one third that of Uranus, which would make it a star of the eighth magnitude; and he concluded that a good telescope must show it with an appreciable disc. He then wrote to Dr. Galle of Berlin to look for it in the place he had indi-

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Frenchman. This he accomplished; and his work, to quote the words of Prof. Playfair, "affords an example, which is yet solitary in the history of human knowledge, *of a theory entirely complete;* one that has not only accounted for all the phenomena that were known, but that has discovered many before unknown, which *observation* has since recognized. In this theory, not only the elliptic motions of the planets, relatively to the sun, but the irregularities produced by their mutual action, whether of the primary on the primary, of the primary on the secondary, or of the secondary on one another, are all deduced from the principle of gravitation, — that mysterious power, which

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cated. *Galle found it the first night.* It was a star of the eighth magnitude, had an appreciable disc, and was near the spot which Le Verrier had computed. This discovery was made on the 23d of September; the planet was observed at London on the 30th; and has since been seen at several places in this country. There is no doubt that Le Verrier's orbit is a near approximation to the truth. The planet's place in the heavens, its distance, and its magnitude, had been correctly computed; and all from studying the motions of another body distant from it at the nearest about 1800 millions of miles. The annals of science may be searched in vain for a discovery equally wonderful. When La Place computed the figure of the earth from an analysis of the motion of the moon, it seemed almost the work of omniscience; but La Place only arrived by a new method at a result known before. Le Verrier, by studying the motions of a distant and obscure planet, demonstrated the existence of a body before unknown; told where it was; what orbit it was pursuing; and how many pounds it weighed. The astronomer had but to point his telescope, and this distant body, so long buried in the depths of space, and which had caused him such perplexity, was caught at once. The discovery confirms the accuracy of the Newtonian law of gravitation, and explains all the anomalies in the motions of Uranus."

unites the most distant regions of space, and the most remote periods of duration. To this we must add the great truths, — brought in view and fully demonstrated by tracing the action of the same power through all its mazes, — that all the inequalities in our system are periodical; that, by a fixed appointment in nature, they are each destined to revolve in the same order, and between the same limits; that the mean distances of the planets from the sun, and the time of their revolutions round that body, are susceptible of no change whatever; that our system is thus secured against natural decay; order and regularity preserved in the midst of so many disturbing causes; and anarchy and misrule eternally proscribed." *

The briefest mention of the subjects treated of by La Place, will show the comprehensiveness of the work. Some of them are the following: — The laws of equilibrium and motion; the law of universal gravitation, and the motions of the centres of gravity of the heavenly bodies; the figures of the heavenly bodies deduced theoretically, and then compared with the actual observations made of the figures of the earth and the planet Jupiter; the oscillations of the sea and the atmosphere; the motions of the heavenly bodies about their own centres of gravity; the theory of the planetary motions, and their inequalities and perturbations; the theory of comets; light, and the theory of astronomical refractions, &c. &c.

"It will not be uninteresting," says Mr. Pickering in his Eulogy on Dr. Bowditch, delivered before the American Academy of Arts and Sciences,

* Edinburgh Review, vol. II. p. 277.

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"to pause here a moment, and in imagination place ourselves at a height, from which the vast subject of La Place's labors ought to be surveyed. If, then, we concentrate our attention upon it as an entire object, we perceive the powerful intellect of the author, grasping the general phenomena of the matter of the universe, from the whole mass down to the minute and invisible particles, which are the ultimate component parts of that mass; beginning with the laws of equilibrium and motion, generally, as applicable to all matter, solid and fluid; then proceeding, step by step, to the subdivision or parts of the whole, considered as systems of bodies; and, next, to the individual bodies that are members of those systems; then, considering the laws of gravitation, and the mutual attraction and perturbations of the heavenly bodies; next, our own solar system, its planets, satellites, and comets; and, from the consideration of these, the author is led to the attraction of bodies of a particular character, that is, those which are homogeneous and of a spheroidal form, of which the earth is an example, and is particularly discussed; and, connected with which, is the figure of a fluid mass in equilibrium, and having a rotatory motion, as the ocean of our earth; and, finally, after considering the attraction between *masses* of matter, the author proceeds to that which takes place between their *particles*.

"In this manner does the author bring into one grand and magnificent review, the wonderful phenomena of all matter, the entire mass of the material world, through the various portions into which it may be divided, till he arrives at those inconceivably minute particles whose law of at-

traction cannot be certainly determined by the phenomena, because they elude the power of human observation."

This sketch of the extent and magnitude of the work of La Place, seemed necessary in order to give a better understanding of the labor of translating and *commenting* upon it. To translate merely might have been a comparatively easy task. But the original work is extremely abstruse. Steps in the demonstration are often omitted. Dr. Bowditch was accustomed to say, "Whenever I meet in La Place with the words, — 'Thus it plainly appears,' I am sure that hours and perhaps days of hard study will alone enable me to discover *how* it plainly appears." It was said by an English writer, that there were scarcely twelve men in Great Britain who could read the work with any tolerable facility; and of America, the remark was made, that there were perhaps two or three persons besides Dr. Bowditch who could read the original critically: but it was doubted whether the whole of it had been so read by one.

It was the object of the translator to elucidate the difficult demonstrations by supplying the deficient steps, and carrying the processes still farther if necessary; and to continue the work to the present time, so as to put the reader in full possession of all the recent "improvements and discoveries in mathematical science." Another object was to do full justice to the distinguished mathematicians to whom La Place was indebted, but to whom he gave no credit. The most eminent of these was Lagrange, for whose character, as well as remarkable attainments, Dr. Bowditch had the highest respect. How perfectly he attained these

ends would be best attested by the numerous marks of approbation he received from distinguished scholars and scientific bodies, the world over. To him belongs the honor of placing this great work within the reach of all who speak the English language. The amount of labor may be, to some extent, inferred from the fact, that, while in the original there are about fifteen hundred pages, in the translation there are three thousand eight hundred and eighteen. On almost every page the notes exceed the text. There are about "*three* pages of commentary for every *two* of the original." These notes were made at the time of reading the volumes as they were successively published, although they were in a great measure re-written about the time of publishing, so as to incorporate the additional matter, "rendered necessary by the progress of mathematical science." The translation of the four volumes was made between the years 1814 and 1817, while Dr. Bowditch was engaged in all the other duties to which we have before alluded. Although he had such profound respect for the genius of La Place, Dr. Bowditch was not a blind follower. In the course of his commentary, he notices several errors in the original work, and accepts certain of the results obtained, only with limitations. One of the most important and interesting of his questions is on La Place's proof of the permanency of the solar system; and he shows that "however just the inference may be, that the orbits of the three exterior planets, Jupiter, Saturn, and Uranus, can never be very eccentrical, or deviate much from the same plane; yet it does not follow, *from the same equations*, that the orbits of the *smaller* planets will always be nearly circu-

lar, and in the plane of the ecliptic; for the orbits of these might be very eccentric, and even parabolic, and the planes of them be perpendicular to each other, and yet the equation be satisfied."

This gigantic work was not published for twelve years after the translation was completed. The friends of the translator had often urged him to accept their pecuniary assistance in bringing it from the press, and the American Academy liberally offered to print the whole at their expense. Dr. Bowditch preferred, however, to retain his feeling of independence. He was aware that the work would have but few readers, and he chose to delay the publication until he was able to print it himself. This he finally did in four quarto volumes, of nearly one thousand pages each, in a style of elegance suited to the magnitude of the work, and at a cost of more than ten thousand dollars. The volumes were published successively in the years 1829, 1832, 1834, and 1839, the last not being finished until after the death of the translator. The fifth volume of the original work was never translated. The deficiency is of less consequence, since, to a considerable extent, the contents have been incorporated in the notes to those already published.

For the sake of giving as complete an account as possible of this great work, many incidents of his life at Salem have been passed over. We will recur to some of them now. The knowledge of his scientific attainments was early diffused, and led to several proposals, which were not the less gratifying because he concluded not to accept them. In 1806, he was elected Professor of Mathematics in Harvard University; in 1818, he

was requested by Mr. Jefferson to take the same office in the University of Virginia; in 1820, Mr. Calhoun, then Secretary of War, desired him to consent to a nomination to the vacant professorship of mathematics at West Point. One reason of his declining these appointments was his reluctance to speaking in public. Beside these testimonials to his character, he received others in the shape of elections to various learned bodies. The American Philosophical Society admitted him as a member, in 1809; the Connecticut Academy of Arts and Sciences, in 1813; the Literary and Philosophical Society of New York, in 1815; the Edinburgh Royal Society, in 1818; the Royal Society of London, in 1818; and the Royal Irish Academy, in 1819. The degree of LL. D. was conferred upon him by Harvard University, in 1816. At a later period of his life, after the first volumes of the translation of La Place were published, he was chosen a member of the Royal Astronomical Society of London, — the Royal Academy of Palermo,—the British Association,— and the Royal Academy of Berlin. Had he but lived a little longer, he would probably have been elected a member of the Royal Institute of France; inquiries having been proposed by that distinguished body, just before his death, which would probably have led to that result.

In 1823, Dr. Bowditch received an invitation to take charge of a marine insurance company in Boston, in connection with the Massachusetts Hospital Life Insurance Company. He at first declined, although the compensation offered was three times as great as he was receiving at Salem; but the invitation was soon more urgently

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repeated, and the proposed salary raised to five thousand dollars, so that he thought it not right for him to refuse the solicitation, especially as the refusal would only have led to a still higher offer on the part of those who were determined to secure his services. He left Salem with regret, and received, at his departure, a public demonstration of the high regard of his friends.

After removing to Boston, he continued to superintend both the institutions with which he had become connected, until his business as Actuary of the Life Insurance Company became so great as to occupy all his time, when he relinquished his connection with the other corporation, whose concerns were brought to a close and its charter surrendered. In the mean time, the institution with which he remained connected until his death, greatly enlarged its operations. It was first incorporated with a capital of half a million, with power to effect insurances upon lives and to grant annuities. To this was soon added, in consequence of the suggestions of Dr. Bowditch, the right to receive money in trust, so as to become a great savings bank. This part of the business increased under his excellent control, until the amount of property received exceeded five millions of dollars. To manage funds so large, entrusted to the institution by those whose want of ability or whose circumstances prevented them from taking care of their own, required great firmness, delicacy, and sagacity. It is needless to say, that by the possession of all these qualities, together with scrupulous integrity, and the utmost openness and fairness, Dr. Bowditch disarmed the prejudices which many felt against such a gigantic moneyed

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institution, and obtained for it a degree of respect and credit from all classes in the community, as entire as was ever accorded to any similar institution in the world.

The management of the business of the office was directed by himself. He calculated interest-tables for the use of the corporation, which saved the constant employment of a clerk. He introduced such simplicity and perspicuity in the forms of the blanks and the books for accounts, that hardly any change has been since found necessary, and the transaction of business is greatly facilitated. He always attended personally to every contract made by the Company, and to every note or mortgage taken by it. The greatest regularity and method were introduced into the transactions; and although a rule might, in some cases, seem to be severe, he would rather adhere to it, than, by departing from it, give license for its general violation.

To be consistent, and preserve strictly the rules of the office, sometimes required great moral courage and independence. A wealthy gentleman called on a Saturday to deposit ten thousand dollars. His funds in the bank were three hundred dollars short of that amount, and he offered his check for that sum, to be paid on Monday. The actuary declined to take as cash a check payable at a future day; the rule of the office forbade it. The gentleman was astonished that he could not be trusted a day for so small a sum. Dr. Bowditch remarked, "I am happy that it has become necessary to enforce this rule in an extreme case. Having been once applied to yourself, no one else can ever object to a compliance with it."

The result was, that Dr. Bowditch supplied the deficiency from his own funds, and received the check himself.

On another occasion, a gentleman called to deposit a sum of money in behalf of a young lady, his ward. While he was there, another gentleman, a friend of the actuary, called to request him to take twenty or thirty thousand dollars. Mr. Bowditch declined. "Why not receive from me," said the gentleman, "as well as from anybody else?" "Because you can take care of the money for yourself. Whenever, as at present is the case, there is so much money in possession of the Company uninvested, that it will not be a decided advantage for them to take any more, I receive it only from such as cannot take care of it themselves. For such cases, especially, was the Company designed. It is a sort of savings bank, except that it is on a larger scale than usual."

It was a rule, which he thought an important one, never to receive money from foreigners, or residents out of New England. Hence, on one occasion, he refused one or two hundred thousand dollars offered to him by a resident in Nova Scotia, although the financial difficulties of the time, in his opinion, rendered the acquisition of so large a sum very desirable.

It was a duty of the messenger of the office to receive the interest paid on mortgages and notes, and hand it immediately to the actuary to be endorsed. If persons called to make payment after business hours, and were willing to entrust the sum to this officer, taking *his* promise that the endorsement should be made the next day, he was accustomed to receive it. Several years since,

the messenger, yielding to temptation, spent a sum of one hundred and twenty dollars so received, intending to replace it from his salary, which in a few days would be paid. The solicitor of the Company, a son of Dr. Bowditch, came to a knowledge of the transaction, through the confession of the delinquent, the day before the salary was due. The messenger besought him so earnestly not to reveal the matter to the actuary, and gave such solemn assurances that the money should be paid on the morrow, that the son, though reluctantly, consented. The morrow came, — the salary was paid; but the messenger, instead of fulfilling his promise, handed it to a creditor, who threatened him with the severity of the law. As soon as this was known, the solicitor disclosed to Dr. Bowditch the original offence. The reply was, "Had it been your own money, you would have been at liberty to listen to the dictates of compassion and humanity; but, as an officer of this institution, you have committed, though unintentionally, a great fault, which I can with difficulty overlook. You must give me your own check for the whole amount of the deficit, since, by a timely exposure, the Company could have withheld the salary which has just been paid. This being done, all further action I leave to the Directors." It was a *principle* with Dr. Bowditch, insisted upon more strongly than ever after this affair, "that no person under pecuniary embarrassment should remain connected with the office. To see the note of one of its officers offered upon 'change, would, with him, at any time, have been a conclusive reason for his instant dismissal. He knew intimately the weakness of human nature:

that honesty and integrity may in a moment be lost by those fatal entanglements; and he regarded the prayer for delivery from temptation as one of vital importance. In his own conduct, he practised upon the same rule. He never endorsed or became surety for any of his children, or made any engagements by which he might become liable to forfeit his independence."

On returning to the office one day after a few minutes' absence, he found that he had accidentally left open a trunk "containing all the convertible property of the Company." No one was present or had been, except one of his fellow-officers, in whom he had the greatest confidence. Without saying a word, he took out and carefully examined every paper. Many persons would regard this as a practical expression of want of confidence in the gentleman who alone had been present. He did not intend it as such; for there was no one in whom he reposed more trust. Some would think it such an excess of a virtue, as to border upon a fault, — a degree of carefulness nearly allied to a disagreeable habit of suspicion. But in this age of dishonesty, of indifference to public property, when so many widows and orphans have lost their whole living by the reckless mismanagement of public institutions, and when the actions of even sovereign and independent States have tended so greatly to impair in men's minds the sacredness of obligations, we will more than pardon one who exaggerates, if he can, the old-fashioned virtue of integrity, — we will look upon him with veneration.

To multiply instances which exhibit the sterling virtues of his character would too much extend this sketch, already protracted beyond the assign-

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ed limits. We must hasten to a conclusion. Dr. Bowditch manifested the same general interest in the public institutions of Boston, as before in those of Salem. He became connected with several charitable societies. From 1826 to 1833, he was a Trustee of the Boston Athenæum, and was the means of adding to its funds and general prosperity. One volume of the Transactions of the American Academy of Arts and Sciences was published while he was its President. In 1826, he was chosen a member of the corporation of Harvard University, — he, who never called it alma mater, nor owed it any thing for instruction, beyond what all in the community owe to a beneficent institution by whose influences they are guided and assisted, though they know it not. He retained this connection till his death, and always regarded the days of its annual festivities as his "high holidays."

In 1834, Dr. Bowditch was deeply afflicted by the death of his wife, who died on the 17th of April. This excellent lady had always rendered her husband the utmost assistance in her power, in pursuing his arduous studies. She encouraged him to undertake the publishing of his great work, and never counted a sacrifice worth the naming which contributed to advance the higher interests of science.* But for her, the translation of La

* Mr. Pickering places her example beside that "which the history of literature has recorded of the illustious German scholar, Reiske, who would have refunded to his *six* subscribers the price of their copies, and then have abandoned in despair the publication of his great work (the Greek orators), had not his affectionate and resolute consort, in a determined tone, said to him, "Trust in God; sell my jewels to defray the expense: what are a few shining baubles to my happiness?" — Eulogy, p. 33.

Place would not, probably, have been published. It was fitting, — a beautiful tribute, indeed, — that the work should be dedicated to her memory.

Dr. Bowditch's manner of life was methodical, and his health generally good. He rose early, breakfasted before the rest of his family, studied two or three hours, walked, and then went to his office. At two o'clock the office was closed, and before three he dined, after which he indulged in a short nap. On awaking, he went to his studies again, and near the close of the afternoon visited the office to see if any thing required his attention. The evening was devoted to study and conversation. Although he daily gave so much time to mathematics, it was said of him, "You never saw the mathematician, unless *you inquired for him*." His stores of knowledge on a variety of subjects were great, and his range of reading somewhat general, although he preferred history and biography. Fiction he reserved "till the thermometer stood at 90°."

Towards the latter part of the year 1837, he began to experience frequent pain and uneasiness, but, as he said, could not afford time to be sick. Early in January of the following year, he called in a distinguished physician, and his disease was soon pronounced to be of a dangerous character. The symptoms became more and more alarming; his stomach rejected all solid food, and his sufferings were intense. He continued, however, daily to sit for some time in his library, until the day before his death. On the 7th of March, he made his farewell communication to the Company, whose affairs he had long superintended, taking an affectionate leave of its officers and

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directors. The fourth volume of his translation was at this time going through the press, and he continued as usual to correct the proof-sheets until a very short time before his death. The last page which he saw was the thousandth; the last which he carefully revised, the six hundred and eighty-fourth.

Like the old philosopher of Syracuse, his favorite studies were pursued to the very end; but, unlike that ancient scholar, his end approached amidst no city ruined, but in a prosperous, sympathizing community, among cherished friends, by whom his sufferings were soothed, and every want anticipated. It was brought about by no violent blow of a brutal soldier, but by the merciful, although painful, process of disease. Early on Friday the 16th of March, 1838, it became evident that he was sinking; and at about one o'clock, he placidly breathed his last. On the following Sabbath, his remains were deposited in his own tomb under Trinity Church, in Summer street. "Had he lived until the twenty-fifth of the month, he would have just completed his sixty-fifth year."

The life thus sketched, is full of encouragement to the scholar, and replete with lessons for all. Mr. Bowditch was a man of rare intellectual endowments; but, had it not been for his sterling moral qualities, he never could have accomplished what he did, nor have gained so honorable a name. His strict integrity commanded the respect and confidence of everybody, while his diligence and perseverance enabled him to appropriate to himself every intellectual good that came in his way. His rule was, to do one thing at a time, and to finish whatever he began. He did not decide

upon a course hastily, but having decided, he did not hesitate. "Never undertake any thing," he was accustomed to say, "but with the feeling that you *can* and *will* do it. With that feeling success is certain, and without it failure is unavoidable." By concentrating his energies, he overcame difficulties which would otherwise have been insuperable. By the most diligent use of every moment, he gained time for great achievements in learning, and had enough to spare for the duties of friendship and benevolence. No one could be a kinder parent, or a more cheerful companion. He was the life of the circle at home, and the delight of every visiter. "You saw the philosopher," says one who knew him, "entering with all the enthusiasm of youth, into every subject of passing interest. You saw his eye kindle with honest indignation, or light up with sportive glee; you caught the infection of his quick, sharp-toned, good-natured laugh, and felt inclined to rub your hands in unison with him at every sally of wit, or every outbreaking of mirthfulness. Let the conversation turn in which way it might, he was always prepared to take the lead; he always seemed to enter into it with a keener zest than any one else. You were charmed and delighted; the evening passed away before you were aware, and you did not reflect, until you had returned home, that you had been conversing with unrestrained freedom with the first philosopher in America." It is pleasant to know that his library, which, in its particular department, has no equal in America, is to be preserved unbroken, and has been dedicated, by the generosity of Mr. Bowditch's family, to the use of the public, so far as it can be done

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without injury to the books. His modesty was as great as his learning; and in this, as in almost every thing pertaining to the life of a self-taught scholar, he will remain a notable example to those who may study his character. His name is one which will render our country illustrious among the nations. His life will stimulate all who study it, to be diligent, studious, persevering, and upright.

JAMES COOK.

Every science is closely connected with many other sciences, and an advance in one is sure to be followed by an advance in others. Of this the recent improvements in the science of geography are a memorable illustration. It is an interesting fact in the history of science, that we are indebted for an accurate knowledge of our earth to a previous knowledge of the heavens. The wandering stars have taught us where stand fixed the everlasting hills. It would seem that mere curiosity would have long since prompted men to enlarge to the utmost the boundaries of geographical knowledge, and to have at least determined the situation of places with considerable accuracy. But curiosity, although it has accomplished much, has had many things to contend with. Extensive explorations are attended with great cost. Men went with timidity — the timidity of ignorance and superstition — into the regions that lay much beyond the bounds of civilization; where, besides, there was little to tempt them, and much that was really formidable to deter. The condition and character of governments rendered them indifferent to the state of geographical knowledge, or incapable of extending it; and, above all, want of skill in navigation hindered maritime discoveries; and the absence of proper instruments and of general scientific attainments prevented an accurate determination of what was known. The early travellers were for the most part merchants, and it may be

said, generally, that geography was but a very humble attendant upon commerce.

The Cape of Good Hope was not discovered until 1486. The celebrated voyage to India by Vasco de Gama, the great Portuguese navigator, did not take place till 1497. In the mean time, in 1492, Columbus had found another world. Knowledge advanced with rapid strides through new fields, but yet was neglectful of much that lay scattered about the old. It became general, but had not become accurate and severe.

We should think that few things in geography would be determined sooner than the size and shape of well-known kingdoms, and the position of important places. Yet even now ignorance in these respects is not very uncommon. What discrepancies, for example, in fixing the position of towns in Mexico! Different maps place the same city at points two hundred miles distant from each other. How imperfectly have the coasts of even the old civilized nations been mapped out, until comparatively modern times! Countries which contained all the science of the world could not accurately give their own shape and dimensions. Italy, before the time of D'Anville (the earlier part of the eighteenth century), was thought to be considerably larger than it really is; and that distinguished geographer was considered a very bold man in venturing to reduce it to proper magnitude. When the map of France was corrected by astronomical observations, it was found necessary to cut off more than a degree of longitude along the western coast, from Brittany to the southern part of the Bay of Biscay, and more than half a degree from the shores of Languedoc and Provence; which led Louis XIV. to say

to the astronomers by whom the measurements were corrected, that "he was sorry to observe that their journey had cost him a large portion of his kingdom." South America was represented, in comparatively modern times, as nearly 4,500 miles across; and North America, from the mouth of the St. Lawrence on the east, to New Albion on the west, as more than 9,000. California was described as an island. Van Diemen's Land, even after being surveyed by a companion of Capt. Cook, was considered a part of New Holland. Constantinople, or rather Byzantium on whose site it was built, the capital of the Eastern empire, was placed by the geographer Ptolemy (born A.D. 70) two degrees too far to the north; which mistake later Arab writers, hearing that there was an error of two degrees, corrected by *adding* two degrees more, — thus making the city 276 miles north of its true position. About the year 1580, observations were made which gave the correct position, or at least an approximation. Carthage, by the same geographer, was placed 313 miles too far south, and "the error was not taken notice of till 1625." The Mediterranean Sea, instead of being made, as it should be, between 41 and 42 degrees in length, from Gibraltar to the present Scanderoon, was made 62 degrees; that is, more than 20 degrees, or nearly 1,400 miles, too long. This mistake was not corrected till the beginning of the last century. The difference in longitude between Rome and Nuremberg was estimated in the fifteenth century at 620 miles; in the seventeenth century, at only 69 miles, — a difference considerably above 500 miles between "two of the best known towns in Europe." In maps of the

sixteenth century, Ferrara in Italy, and Cadiz in Spain, on nearly the same parallel of latitude, were placed 600 miles too far apart.

It was not until astronomy had made considerable advances, that geographical errors, of which the above are but specimens, began to be corrected. The discovery of the satellites of Jupiter, in 1610, by Galileo, furnished an important means for determining longitude with accuracy. It was many years, however, before the requisite tables and calculations were made, and the telescope perfected, so as to enable astronomers to avail themselves of this discovery. In 1671, one of the first effective observations was made to determine the difference in longitude between Paris and the observatory of Tycho Brahe, at Uraniberg, in Denmark.

In England the name of Halley is held in high honor among men of science, for many attainments and discoveries, and, among the rest, for applying the principles of astronomy to geography. So remarkable was his early proficiency, that in 1676, at the age of twenty, he was sent to St. Helena to make a map of the stars in the southern hemisphere. While there, he observed a transit of Mercury across the disc of the sun. It occurred to him that this apparently trifling phenomenon might, by furnishing means for determining the sun's parallax, also furnish the elements for calculating the dimensions of the solar system. The transit of Venus seemed to him to afford still greater advantages, but that phenomenon occurs very rarely; one had taken place in 1639, the next would not happen till 1767. Halley earnestly exhorted astronomers who might then be

alive, to observe that event. It *was* observed; and, so far as the subject of this sketch is concerned, it is interesting to remember that, in order to watch it, he undertook his first great voyage, which, as we shall see, so much enlarged our knowledge of the globe.

About the middle of the last century, the interests of commerce prompted some of the principal governments of Europe to fit out expeditions of considerable magnitude, partly for discovery, partly for the purpose of establishing colonies, and partly for the direct purpose of trade. The interests of science, too, began to be regarded as of sufficient consequence to be promoted at the public cost, and to warrant liberal expenditures. In 1764, Commodore Byron was sent on a voyage of discovery to the southern seas, and was absent nearly two years. One of his two ships was sheathed with copper, this being one of the first experiments for determining the value of that method of preserving the bottoms of vessels from the attack of worms. After his return, Capt. Wallis was sent out with the general design of prosecuting the discoveries still farther. He discovered the island Otaheite, or, as it is now generally called, Tahiti. Of these voyages, however, commerce was, at least, as prominent a cause as science. The preamble to Commodore Byron's instructions ran as follows: "Whereas nothing can redound more to the honor of this nation as a maritime power, to the dignity of the crown of Great Britain, and to the advancement of the *trade* and *navigation* thereof, than to make discoveries of countries hitherto unknown; and whereas there is reason to believe that lands and islands of great extent, hitherto unvisited by

any European power, may be found in the Atlantic Ocean, between the Cape of Good Hope and the Magellanic Strait, within the latitudes convenient for *navigation*, and in the climates adapted to the *produce of commodities useful in commerce;* and whereas his majesty's islands, called Pepys island, and Falkland's Islands, lying within the said track, notwithstanding their having been first discovered and visited by British navigators, have never yet been sufficiently surveyed, as that an accurate judgment may be formed of their coasts and products; his majesty..... has thought fit that the enterprise should now be undertaken."

The first great expedition, fitted out mainly for scientific purposes, was that which sailed from Plymouth, August 26, 1768, under the command of Captain James Cook. The interest of the civilized world has ever clung to this distinguished navigator, in part, on account of his great professional merits, and in part, on account of his tragic death. This last circumstance has given him a hold upon the popular sympathies, which no other navigator ever obtained. About twenty years after the first voyage of Cook, the French commander, La Perouse, emulating his fame, and admiring his character, exceeded his model, perhaps, in the sad termination of his career. He sailed on a voyage of discovery, and his generation never heard of him again. For nearly forty years there was not the slightest clue to dispel the mystery which hung about his fate. But common minds need something tangible and palpable to arouse and retain their interest. In thousands of cottages in England and America were hung up rude prints of the "Death of Capt.

Cook;" while the mysterious fate of La Perouse, if we mistake not, produced, even among his own countrymen, its most lasting impression upon persons of comparatively high culture, and more likely to be affected by the gloomy obscurity of the unrevealing sea.

JAMES COOK was born in Yorkshire, in the year 1728. His father was a day laborer to a respectable farmer, and, when his son was two years old, became an under steward upon an estate near the village of Great Ayton. James was kept at work upon the farm till he was thirteen, when he was permitted to attend school. He studied arithmetic and bookkeeping, and is said to have exhibited a good deal of talent at figures. When a few years older, he was apprenticed to a shopkeeper, in a small fishing town about ten miles from Whitby. Here he manifested good judgment and considerable skill in accounts, but his inclinations began to lead him very strongly to the sea. His master, willing to indulge him, gave up his indentures, and he soon engaged himself with the owners of some vessels employed in the coal trade. This navigation, carried on upon a coast, at some seasons of the year very dangerous, became from that circumstance a nursery of skilful seamen. As Cook was diligent in his new occupation, and gave satisfaction to his masters, they favored him with opportunities of learning the various parts of his profession; and, in the course of a few years, he made voyages, not only upon the immediate coast, but to Liverpool and Dublin, and also to the Baltic.

In 1752, he was made mate of a vessel of 400

tons, and, in the next year, received the offer of being commander of the ship. This, however, he saw fit to decline. Impressments for the British navy were carried on, at this time, to a great extent; and either to avoid being taken contrary to his own consent, or for some other reason which does not appear, he entered on board the Eagle, a man-of-war of sixty guns, under the command of Captain (afterwards Sir Hugh) Palliser. He served on board this vessel with so much distinction, that, by aid of his friends, and the strong recommendation of the captain, he was appointed master of the Mercury, a small vessel belonging to the squadron about to proceed to the attack upon Quebec. He soon joined the fleet in the St. Lawrence, and his talents and resolution were not long in making themselves perceived.

The fleet was expected to coöperate with the land forces under General Wolfe; but before this could be done, it was necessary to sound the river, so as to determine the channel. This was a difficult task, since it must be carried on in the face of a sagacious and watchful foe. It required a union of important qualities to enable one to perform the duty successfully. Cook was selected on the occasion, and entered upon the labor with accustomed resolution and skill. He carried on his operations in the night, and for some time was not perceived. At last he was discovered, and a large number of boats sent to cut him off. He fortunately became aware of the attempt in season to escape to the island of Orleans. There was, however, little time for him to spare; since, just as he stepped on shore, the Indians in pursuit entered the stern of his boat, and took possession of it.

His task, however, was accomplished, and he had the satisfaction of laying before the admiral a full and accurate survey of the channel.

After the conquest of Quebec, he was appointed to examine carefully the difficult parts of the river, which was not then familiar to the English. He soon was transferred to the Northumberland, the flag ship of the commodore at Halifax, as master. Notwithstanding his success thus far, he felt his ignorance of mathematics, and applied himself in the midst of his other labors, to the study of Euclid's Elements of Geometry, and, having mastered them, to astronomy. He also devoted himself more particularly to the study of hydrography, in which he soon had an opportunity of exhibiting his skill, by a coast-survey of Newfoundland, which had lately fallen into the power of the English, and which began to be regarded, especially by its governor, Sir Hugh Palliser, as of great consequence for its fisheries. It was chiefly from this governor's recommendation, that Cook was appointed Marine Surveyor of Newfoundland and Labrador; and a schooner was placed under his command in order to enable him to perform his official duties. An account of a solar eclipse, observed in Newfoundland, which he transmitted to the Royal Society in 1766, and the longitude of the place as computed from it, gained him a good deal of credit for a knowledge of the scientific part of his profession. During some interval in his service on the northern coast of North America, he seems to have been upon the West India station, where he is mentioned as having been sent by the commanding officer, as a bearer of despatches to the Governor of Yucatan.

In the mean time, the year 1769 was approaching, in which was to take place that transit of Venus, which Dr. Halley had urged upon the attention of astronomers, as of so much consequence in its possible relation to science. The Royal Society were not forgetful of their duty: they presented an address to the king, stating the advantages of making the observation in another hemisphere, and prayed his majesty to fit out a vessel, and send it to the South Seas under their direction.

This request was favorably answered, and it only remained to select the proper person to entrust with the chief command. It was first offered to Alexander Dalrymple, chief hydrographer to the admiralty. This gentleman had already visited the eastern archipelago, had studied those regions with considerable zeal, and had shown much partiality for geographical researches. He was an earnest advocate also of the existence of a Southern continent, and early applied to the government to assist him in his schemes of discovery. He even went so far as to compose a code of laws for the republic which he was sanguine of one day founding in those remote shores. No one was to be admitted to the republic who would not subscribe to this code; and if any one dissented from any of the laws, he was to forfeit all his property. This code was so odd in many of its features, so manifestly impracticable, or, if not impracticable, so unwise, that it was pronounced "the best possible model of the worst possible commonwealth."

Dalrymple refused to undertake the duties required, unless endowed with the amplest powers as the commander. Having never held a commission in the navy, the admiralty, remembering

the perplexities arising from a similar arrangement on a former occasion, declined to accede to the demand. The hydrographer would not recede, and the admiralty began to look out for another man. Cook was proposed. All who knew him spoke of him favorably. He was of steady courage, cool, sagacious, scientific. The offer was made to him, and he accepted it. He was promoted to the rank of lieutenant, or as some say, of captain, and allowed to select his ship. Instead of taking a frigate, or sloop of war, he showed his good sense by choosing a vessel built for the coal trade, with whose sailing qualities he was acquainted; which was better adapted to carrying the requisite stores; was less exposed in running near the coasts; was less affected by currents; and, in case of necessity, could be more easily repaired. It was of only three hundred and sixty tons burden, and he named it the Endeavour. It was fitted out with great care and liberality, and, for the sake of better accomplishing the scientific purposes of the expedition, was furnished with a corps of scientific men. Mr. Charles Green was named as the astronomer to observe the transit. Dr. Solander went as naturalist; and Sir Joseph Banks, afterwards President of the Royal Society, accompanied them for the sake of increasing his knowledge of natural history. Possessing a large fortune, he provided himself with draftsmen, and with every thing which would conduce to success in his favorite pursuits, and proved a very valuable accession to the company. By the advice of Captain Wallis, then recently returned from his voyage round the world, the island of Otaheite (Tahiti) was fixed upon as the place for making the necessary observations.

At length, on the 26th of August, 1768, they sailed from Plymouth. Captain Cook was about forty years old. He had risen to his honorable and important position by his own genius, and fidelity. Confidence, that "plant of slow growth," had been liberally bestowed, deserved as it was by a long course of faithful effort. Having touched at Rio Janeiro, where the governor, at a loss to account for the expedition unless it were sent out for some hostile purpose, regarded them with so much suspicion, that they were hardly permitted to step upon shore, they directed their course to Cape Horn. Having landed upon Terra del Fuego, a party advanced incautiously so far into the country that the night surprised them, and they were in the utmost danger of perishing by the cold. Dr. Solander, who had travelled much in the northern regions of Europe, advised his companions to resist the approach of drowsiness which the cold would be likely to bring on. He himself was among the first to feel the benefits of his advice: under the influence of the torpor, he could hardly be kept awake by his associates, who dragged him along, and thus only saved his life. Two of Mr. Banks's servants lay down to rest in the snow, and were found dead the next morning.

It was a question among navigators at that time whether it was best to pass through the straits of Magellan, or round Cape Horn. Captain Cook took the latter course, and passed round the cape in thirty-four days. On the 13th of April, 1769, the voyagers arrived at Otaheite, and anchored in *Matavai* bay. Captain Cook immediately took measures to preserve the friendship of the islanders. He changed names with the chief, which,

according to the customs of the region, was a kind of treaty of friendship. He drew up a particular code for regulating the intercourse of the crew with the natives, marked with much good sense, and dictated by humanity. Tents were erected on shore for the sick, and an observatory established for watching the expected transit. As the day approached (the 3d of June), the anxiety was great lest something might occur to frustrate the main purpose of the expedition. Disturbance from the natives could perhaps be avoided, but a cloudy or tempestuous day they could not so easily guard against. Whatever precaution could be of any avail was carefully observed. A party was sent to another part of the island considerably to the westward of the main observatory, and still another sent to Eimeo, an island nearly sixty miles distant, so as to give as much security as possible. The day came, and the sun rose without a cloud. The observations at all the posts were most satisfactory, and contributed essentially to solve the great problem which interested the minds of scientific men. This transit has been truly said to form an epoch in the history of astronomy. Besides these observations at Otaheite, it was observed by the French in California, by the Danish at Wardhus in Lapland, by the Swedes at Kajaneborg in Finland, and by another party of the English at Hudson's Bay. By these five observations, the sun's parallax was determined with great exactness.

We will endeavor to make the importance of this understood. Suppose an object to be seen from two ends of a strait line, the angle formed at the object by these two converging lines of sight,

is called the parallax. "The parallax of a celestial body is the angle under which the radius of the earth would be seen if viewed from the centre of that body. Suppose, when the moon is in the horizon at the instant of rising or setting, lines to be drawn from her centre to the spectator and to the centre of the earth; these would form a right-angled triangle with the terrestrial radius, which is of known length; and as the parallax or angle at the moon can be measured, all the angles and one side are given; whence the distance of the moon from the centre of the earth may be computed. The parallax of an object may be found, if two observers under the same meridian, but at a very great distance from one another, observe its zenith distance on the same day at the time of its passage over the meridian. By such contemporaneous observations at the Cape of Good Hope and at Berlin, the mean horizontal parallax of the moon was found to be 3,459″, when the mean distance of the moon is about sixty times the mean terrestrial radius, or 237,360 miles nearly." Although this method was sufficiently accurate for the moon, it was found not to answer for the sun, whose distance is so great that the slightest error in the observation would lead to a great error in the results. The transit of Venus supplied the deficiency. "If we could imagine that the sun and Venus had no parallax, the line described by the planet on his disc, and the duration of the transit, would be the same to all the inhabitants of the earth; but as the semidiameter of the earth has a sensible magnitude when viewed from the centre of the sun, the line described by the planet in its passage over his disc appears to be

nearer to his centre or farther from it, according to the position of the observer; so that the duration of the transit varies with the different points of the earth's surface at which it is observed. This difference of time, being entirely the effect of parallax, furnishes the means of computing it from the known motion of the earth and Venus, by the same method as for the eclipses of the sun." *

The transit which Cook was sent out to observe, lasted at Otaheite six hours; and the difference between that and the duration at Wardhus, in Lapland, was eight minutes. From this and some other observations, the sun's horizontal parallax was found to be 8″577, and the distance of the sun from the earth, about ninety-five millions of miles. Can it soon cease to be a matter of astonishment to the unlearned, that by merely knowing the fact that the passage of a little planet, in appearance simply a black speck, across the face of the sun, appeared to an observer in one hemisphere eight minutes longer than it did to an observer in another hemisphere, we can tell the distance of the sun from the earth in miles, and compute the dimensions of the solar system?

During his stay at Otaheite, Cook won the confidence of the natives, and was enabled to learn much of their customs and manners. After having completed his observations, he circumnavigated the island, and visited many others in the vicinity. A native of high rank and considerable intelligence, named Tupia, wished to accompany the English. His request was readily grant-

* Mrs. Somerville. The Connection of the Physical Sciences.

ed, and he proved of much service. The group of islands was named by Captain Cook, the *Society Islands*, which name they have ever since retained.

Sailing thence, they made land again on the 6th of October, and soon concluded that it must be New Zealand. In exploring its shores, they discovered a secure and capacious harbor, which they named *Queen Charlotte's Sound*. They also passed through the strait between the northern and southern island, and thus determined that this land was not, as formerly supposed, a part of a southern continent. To this strait, geographers have very properly given the name of the navigator who discovered it, and who afterwards circumnavigated both the islands. This may be considered his first grand geographical discovery.

From New Zealand, the expedition proceeded to New Holland; and, from the variety of new plants found by the naturalists in the inlet where they anchored, the place received the name of *Botany Bay*, a name which, in later times, is suggestive of any thing sooner than the sweet odors of flowers and the simplicities of rural life. Along the borders of this new country they proceeded for two thousand miles, exploring the coasts, and making a variety of observations. They had hardly met with an accident, when one night the ship struck upon some coral rocks with so much violence that it seemed as if it would go to pieces. By throwing overboard the guns and such stores as could be spared, she was got afloat, and, to their wonder, the leak did not increase. On finding a harbor where repairs could be made, they examined the bottom, and found a large piece of coral

which had broken off, and remained fixed in the hole which it had knocked in the timbers. But for this singular and providential circumstance, the ship would have filled and sunk as soon as she was clear of the reef.

After repairing, Cook sailed round the northern part of New Holland, and gave the name of *New South Wales* to the portion which he had surveyed. Thence by way of Batavia and the Cape, he made his way home, and on the 12th of June, 1771, after an absence of nearly three years, came to anchor in the Downs. The latter part of the voyage was rendered sad by the loss of Dr. Solander, Mr. Green, the astronomer, and many of the crew. But on the whole, it was considered that great results had been arrived at by the expedition, not only for astronomy and geography, but incidentally for many other of the natural sciences. The name of the fortunate commander became at once famous. One part of his discoveries led the way to another expedition. New Zealand was found, as before stated, not to be the extremity of a continent, but an island. The speculations relative to the great *Terra Australis Incognita* were at once revived by the announcement. It was determined to send out another expedition, mainly to settle the question, if possible, of the existence of such a continent. The king was pleased with the proposal, and the Earl of Sandwich, at the head of the Admiralty, seconded it with much satisfaction. Two ships, the Resolution, of four hundred and sixty-two tons burden, and the Adventure, of three hundred and thirty-six, were fitted out, and Captain Cook appointed commander. The Adventure was com-

manded by Captain Furneaux. Naturalists and astronomers were chosen to have charge of the scientific observations, and the ships were amply stored with every thing that would conduce to the comfort and health of the crews, particularly with those remedies which might guard against the peculiar ills to which the confinement of a long voyage rendered them liable.

The second voyage was commenced on the 13th of July, 1772, on which day the vessels left Plymouth. After an absence of more than three years, and having sailed more than 70,000 miles, the adventurous navigators cast anchor again at Portsmouth, Capt. Cook's ship having lost but one man by sickness. For the particulars of this interesting voyage, the reader must look to the complete accounts of it which have been published. They did not succeed in discovering a southern continent, but demonstrated that what had been mistaken for such by previous navigators, especially the French, had no existence. Their progress south was impeded by immense quantities of ice. Some of the icebergs were two miles in circumference and sixty feet high, and yet the waves ran so high as to break entirely over them. They found, however, to their surprise, that the ice islands were fresh, and hence they derived from them an abundant supply of pure water. From the time of leaving the Cape of Good Hope till they reached New Zealand, during which they had been at sea one hundred and seventeen days, and had sailed 3,660 leagues, they did not see land.

At New Zealand, Capt. Cook endeavored to establish friendly relations with the chiefs, and

placed on shore a ram and ewe, and two goats, a male and female. He also stocked a garden with the seeds of vegetables suited to the climate. In December, 1773, the voyagers crossed the antipodes of London, and had the satisfaction of feeling that they were at the farthest possible point from home. They proceeded also to their old station at Otaheite, and subsequently visited the *Friendly Islands*, as Capt. Cook named them. He also discovered *Sandwich Island*, so called by him, after his patron, the Earl of Sandwich. He examined carefully some of those clusters of islands in which the Pacific abounds, to one of which he gave the name of *New Hebrides*. Another island which he discovered he called *New Caledonia*, and another still, which at the time was entirely uninhabited, *Norfolk Island*. In the course of his exploration, he sailed far south without meeting with land, and, from the height and great swell of the waves, concluded there could be no continent in that direction, unless so near the pole as to make it of no use for the purposes of emigration or commerce. It was left for the American Exploring Expedition, sixty-six years afterwards, to determine the question of a southern continent, and mark out a long outline of its coast.

Capt. Furneaux, who commanded the Adventure, was not equally fortunate with his superior. On one of the southern cruises the vessels parted company, and did not meet again during the voyage, although they reached England within a day of each other. Many men were lost from sickness on board the Adventure; and, what was more melancholy, a midshipman and nine men were

surprised by the savages at New Zealand, and inhumanly destroyed. Capt. Furneaux, in the course of his voyage, partially explored Van Dieman's land, and decided, as he thought satisfactorily, that it formed a part of New Holland.

This expedition was thought to have been remarkably successful, and the success was ascribed, in a great measure, to the prudence, good judgment, and resolution of the commander. No previous expedition could boast of half the success, or half the security. It was a great thing, by care in preserving the health of the crew, to take away the anxiety with which the great mortality of preceding maritime expeditions had invested those voyages. Cook was elected Fellow of the Royal Society, and on the evening when he was first present, "a paper was read containing an account of the method he had taken to preserve the health of his crew during the long voyage." He was also rewarded, by having bestowed upon him the Copley gold medal, which was annually given to the author of the best experimental paper. This medal was not conferred, however, till he had sailed on his third and last voyage, and he never received tidings of the honor. The government bestowed upon him more substantial proofs of the satisfaction with which his efforts were regarded. He was raised to the rank of Post Captain, and appointed one of the captains of the Greenwich hospital. By his second voyage, the question of the Southern continent was put to rest for a time; but the maritime energy of the British nation, proverbial for its ceaseless activity, only revived more directly the question, which had frequently been agitated, of a north-west passage.

A reward of £20,000 was offered to any one who should discover a passage to the Pacific, in the direction of Hudson's and Baffin's bays. In order to obtain information, Capt. Phipps was despatched towards the north, and penetrated to within 9½ degrees of the pole. The Admiralty, with Lord Sandwich at their head, held consultations with the most experienced captains relative to the proposed expeditions. On one of these occasions, Capt. Cook was present. His hardships and services on former occasions had been so many and so prolonged, that no one thought of forcing him to leave his quiet retreat, and again brave the dangers of unknown seas. But the conversation on the benefits which were likely to follow from the hoped-for discoveries, so excited his old ardor, that he lost no time in offering his services as commander in this new field of peril and duty. They were readily and gladly accepted. The act of Parliament, offering the reward of £20,000, was so amended as to include public ships, as well as private, and to allow the attempt to be made from the Pacific Ocean, as well as the Atlantic.

The Resolution and the Discovery were the two ships fitted out on this occasion, the latter of which was commanded by Capt. Edward Clarke. Mr. Bayley, the astronomer, and Mr. Anderson, the naturalist, who had accompanied Capt. Cook on his former voyage, were selected to go with him again. Omai, a native of the Society Islands, who had accompanied Capt. Furneaux to England, was sent back loaded with gifts, and with whatever might tend to the improvement of the natives of his island. On the 12th of July, 1776, the ex-

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pedition sailed from Plymouth. At the Cape of Good Hope, they took on board a large freight of live stock for the supply of the islands in the South Seas. Among them were horses, cows, sheep, pigs, and goats. Sailing from the Cape, and passing the islands which Cook named *Prince Edward's*, they came to *Kerguelen's Land*, which they soon found to be only an island instead of a continent, as its discoverer had supposed. On shore, they discovered a bottle, hung by a wire to the rocks, in which was a parchment, with an inscription, declaring that Kerguelen had visited the shore in 1772 and 1773. This bottle, Cook left as it was, having added the date of his voyage and the name of his ships.

On reaching New Zealand, they were much surprised at the shyness of the natives. It was soon explained. The natives, seeing Omai, who was on board the Adventure at the time of the massacre to which we have referred, supposed that Cook had returned to take vengeance. With singular and wise forbearance, he signified to them that his purposes were friendly, and left with them, at his departure, some pigs and goats. At one of the islands which they afterwards visited, Omai found three of his countrymen, whose brief history indicates, perhaps, the manner in which many of those small islands have been peopled. A party of about twenty had started in a canoe, to pass from one island to another near it, when they were overtaken by a tempest and driven out to sea. Without any thing to eat or drink, their numbers soon diminished, and finally the canoe was overset and all but four perished. These clung to the sides of the frail bark and

were finally rescued, having been driven by the tempest six hundred miles. At Omai's request, Capt. Cook offered to carry them back; but they declined to go. Their friends had nearly all perished before their eyes, in the storm, and there were few inducements for them to return. Omai was settled at the island chosen for him, a house erected for his dwelling, by the ship's carpenters, and his treasure of European manufacture landed. He is said to have conducted himself well, and died a natural death about two years afterwards.

On the 8th of December, the voyagers lost sight of the *Society Islands*, and, sailing northward, on the 18th of January, 1778, discovered an island of considerable size, and subsequently two others in the vicinity. The natives were struck with great astonishment at the sight of their unknown visitants, and by their actions showed that they had never before seen a European. They regarded Capt. Cook as a superior being, and, when he came on shore, fell on their faces. It was a matter of great surprise to the voyagers, that the language of the natives was the same as that of the *Society Islands*, nearly three thousand miles distant, and of New Zealand still farther off.

To this group, now discovered for the first time, Capt. Cook, in compliment to his patron, gave the name of *Sandwich Islands*. Of all lately discovered groups, this has become by far the most important and most interesting. Possessing less fertility than many other Pacific islands, they have become known by their surprising conversion to Christianity, and their rapid advancement in civilization, and national impor-

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tance. Their geographical position has been one cause of this, but the most prejudiced cannot help acknowledging that to Christianity they really owe all that they have become. This alone has given them strength to resist the corruptions which the wickedness of the whites has usually entailed upon the savages who have come into connection with them. This alone has given them the intelligence and elevation, which, in less than seventy years from their discovery, has assigned them an established position among the civilized nations of the earth. Commerce certainly has not done it, — such an effect has never been found elsewhere to follow the efforts of trade; their natural talent has not done it, for in native capacity they do not exceed the inhabitants of a thousand other barbarous islands; but the power of the gospel, aiding and directing all other energies, has been the moving cause of this singular and remarkable result. At present, the amount of property in the whalers alone which annually visit their ports is said to be at least 3,000,000 of dollars.

After remaining at the islands ten days, and carrying on a friendly barter in old iron, nails, and other articles of considerable value to the natives, which were given for provisions, Capt. Cook sailed for the American coast. This he reached without difficulty, and entered the deep harbor of Nootka Sound. On the first night, he anchored in water nearly five hundred feet deep, and subsequently found the shore so bold that his ships were fastened to the trees by ropes. It is in this part of the voyage, that the name of the celebrated traveller, Ledyard, appears in connection with that of the more celebrated naviga-

tor. Born in Connecticut, and educated in part at Dartmouth college, after a variety of adventures, Ledyard had found his way to England, and embarked in the expedition with Cook, as corporal of the marines.

From Nootka Sound, where the natives showed evidently that they had come in contact with Europeans,* the expedition made its way towards Behring's Straits, which they found to extend farther east than delineated in the maps of the time. In passing through the straits, both shores were visible at the same time. Behring himself, when he sailed through, saw but one shore, and was not aware of the extent of his discovery. They advanced as far north in the month of August as the ice would permit them, and Cook then determined to return to winter at the Sandwich Islands, and resume his exploration in the following year.

On arriving, on their way back, at the island of Onalaska, on the north-west coast, they found decided evidences of the presence of Europeans. The natives were in possession of tobacco, and had also several blue linen shirts and drawers. While there, a young chief, attended by two Indians, who were supposed to be Asiatics, brought as a present to Capt. Cook, a salmon pie. He also gave him to understand by means of signs, that there were other white men in the country who had come in ships much larger than the native canoes. It was determined to find out the truth of these intimations; but, as the expedition

* Two silver spoons were among the articles obtained from the natives by trade. They had stolen them from some Spanish navigators four years before.

might be attended with risk to one who should undertake it alone, while yet the ships could not wait for the slower movements of a large party, it was thought proper to send a volunteer. This volunteer was Ledyard. He immediately prepared to accompany the young chief. The voyage was not particularly disagreeable, excepting the last part of it, when he was transported across an arm of the sea in a skin canoe. The canoe was made after the Esquimaux plan, covered at the top, and with two holes for the rowers; their passenger was carried by stowing him away at the bottom, where he was obliged to lie in darkness, in perfect ignorance where he was going, and without power to extricate himself in case of any accident. He succeeded in his enterprise, found out that the unknown white men were Russians in search of furs, and returned to the ship accompanied by three of the principal men. By the inspection of their charts, Capt. Cook was satisfied of the extent and originality of his discoveries.

On returning to the Sandwich Islands, which the ship reached in November, Cook discovered Maui or Mowee, which he had not before visited, and soon afterwards, the still larger island of Owhyhee, or, as it is now written, Hawaii. As this was apparently of more consequence than any other island of the group, Capt. Cook spent seven weeks in sailing round it, and surveying its coasts, and at last came to anchor in Kealakeakua bay, on its western side. "To our disappointment in the expedition to the north," says Capt. Cook, in the conclusion of his journal, which from his then impending fate has acquired a peculiar interest, "To this disappointment we owed our hav-

ing it in our power to revisit the Sandwich Islands, and to enrich our voyage with a discovery, which, though the last, seemed in many respects to be the most important that had hitherto been made by Europeans throughout the extent of the Pacific Ocean."

As the vessels anchored in the harbor, the natives flocked to the shore in prodigious crowds. Three thousand canoes, filled with at least five times as many people, were counted in the bay. The intercourse between them and the ships was peaceful and harmonious. Cook visited the shore with much ceremony. Chiefs, with poles as insignia of authority, made way for his boat among the canoes, and another set of officers received him at the shore. "The people," says Ledyard, who was present, — "upon the adjacent hills, upon the houses, on the stone walls, and in the tops of the trees, hid their faces, while he passed along the opening; but he had no sooner passed them, than they rose and followed him. But if Cook happened to turn his head, or look behind him, they were down again in an instant and up again as soon, whenever his face was reverted to some other quarter. This punctilious performance of respect in so vast a throng, being regulated solely by the accidental turn of one man's head, and the transition being sudden and short, rendered it difficult even for an individual to be in the proper attitude. If he lay prostrate but a second too long, he was pretty sure not to rise again until he had been trampled upon by all behind him; and if he dared not to prostrate himself, he would stumble over those before him who did. This produced a great many laughable circum-

stances; and, as Cook walked very fast to get from the sand into the shades of the town, it rendered the matter still more difficult. At length, however, they adopted a medium, that much better answered a running compliment, and did not displease the chiefs; this was to go upon all fours, which was truly ludicrous among at least ten thousand people." Capt. Cook was thus conducted to the *morai*, a sacred enclosure into which the people were not allowed to enter. He obtained from the chiefs, upon certain conditions, a place to erect an observatory and fit up his astronomical instruments.

For some days a good understanding was kept up on both sides. Cook was invited to dine with the king, and, in return, exhibited some fireworks on shore, to the great wonder and even terror of the natives.

In the course of a few weeks, the respect of the islanders for their unknown visitors began to diminish. The novelty had passed away; and the sailors, by the exhibition of too many vices, gave palpable evidence that they were but men, and men, too, not deserving of any excessive veneration. Contests began to occur between the two parties: the natives were thievish; the sailors, rather harsh and overbearing. The good understanding between Cook and the king does not seem to have been diminished at all, and the great navigator appears not to have been aware that he was essentially losing ground with the natives. Wanting wood for his vessels, on one occasion, with singular and for him remarkable disregard for the superstitious feelings of the natives, he offered two iron hatchets for the fence which surrounded the sacred *morai*. The chiefs refused

the price in astonishment. The fence was then taken by force, and the hatchets left, as if with a show of justice; but the people were much exasperated at the sacrilege, for the *morai* was the depository of the dead, a place where the images of their gods were kept, and solemn ceremonies performed.

After remaining in the bay for nearly three weeks, recruiting the crew, and laying in a stock of provisions, they prepared to sail on another cruise. Water only was wanted; and, not being able to obtain any of a good quality, they determined to seek it at some of the adjacent islands. Not long, however, after the ship had left the bay, a violent storm came on, by which one of the masts of the Resolution was so much injured as to render it necessary to return immediately in order to repair it. It was evident, in sailing to their anchorage again, that the feelings of the natives had greatly changed. Not a single canoe greeted their second arrival, and the villages were comparatively destitute of inhabitants. Provisions came in, but inferior in quantity and quality; while a higher price was demanded, and the natives, particularly the chiefs, were desirous to get knives and dirks in exchange. They became bolder in their thieving. On one occasion, a native snatched up the iron tongs and other tools at the forge of the armorer, while he was at work, and, rushing to the ship-side, threw himself into the water, where he was taken up by a canoe, and safely conveyed to the shore. The party that was sent to regain the articles were maltreated, and returned unsuccessful. A short time after this, the large cutter of the Discovery was stolen in the

night. This was so grave an offence that it became necessary to take immediate measures to check the audacity of the islanders. The captains of the two ships concluded, on consultation, that it would be best to get possession of the person of the king, and keep him prisoner until the boat should be restored. This method had been pursued by Cook with success on former occasions. Capt. Clerke, being very low in health, begged to be excused from actively engaging in the affair, and asked that his duties might be transferred to his superior, to which Capt. Cook assented, and immediately made provision for landing. Boats were despatched to the mouth of the harbor, to prevent communication from other places. Cook went on shore in his pinnace with a guard of ten men, beside the boat's crew, while the launch and the small cutter accompanied him.

Upon landing, some of the usual marks of respect were manifested; but various circumstances indicated a hostile state of feeling. The women and children had left the town. Capt. Cook himself, although not fully aware of the state of feeling, was evidently somewhat suspicious. On reaching the king's house, he endeavored to persuade the friendly old man to go with him to the ship. This the king at last consented to do; but the chiefs, who began to assemble in great numbers (Ledyard says there were three or four hundred people, although, in passing through the town, they did not see twenty), when they found out what was wanted, held him back. In the mean time, one of the boats stationed in the harbor, seeing a canoe put off from the shore, fired a shot in order to stop it, and unfortunately killed a

chief of distinction who was on board. The news of this disaster was brought to the crowd, while they were in the state of excitement occasioned by the attempt to take the king, and added greatly to their exasperation. Capt. Cook and the guard were now retreating to the boats, the king still in company. On approaching the water, however, it became evident that it would be impossible to succeed in getting him on board. His wife threw her arms about his neck, and, with the aid of two chiefs, compelled him to sit down.

While in this situation, a chief with an iron dagger was seen to approach, as if with the design of stabbing Cook. The Indian was pointed out to him, and he fired at him with a blank cartridge. The man looked at his mat which was cast about him, and seeing that it was not *burnt*, felt secure and rushed forward a second time, when he was shot down. We shall give the remainder of the account in the words of Ledyard, who was present as corporal of the marines, and whose account is probably as accurate as can be obtained: —

"Cook, perceiving the people determined to oppose his design, and that he should not succeed without further bloodshed, ordered the lieutenant of marines, Mr. Phillips, to withdraw his men and get them into the boats, which were then lying ready to receive them. This was effected by the sergeant; but the instant they began to retreat, Cook was hit with a stone, and perceiving the man who threw it, shot him dead. The officer in the boats, observing the guard retreat, and hearing this third discharge, ordered the boats to fire. This occasioned the guards to face about and fire,

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and the attack became general. Cook and Mr. Phillips were together a few paces in the rear of the guard, and, perceiving a general fire without orders, quitted Teraiobu [the king], and ran to the shore to put a stop to it; but not being able to make themselves heard, and being closely pressed upon by the chiefs, they joined the guard, who fired as they retreated. Cook, having at length reached the margin of the water, between the fire of the boats, waved with his hat for them to cease firing and come in; and while he was doing this, a chief from behind stabbed him with one of our iron daggers, just under the shoulder-blade, and it passed quite through his body. Cook fell with his face in the water, and immediately expired. Mr. Phillips, not being able any longer to use his fusee, drew his sword, and, engaging the chief whom he saw kill Cook, soon despatched him. His guard, in the mean time, were all killed but two, and they had plunged into the water, and were swimming to the boats. * * * He himself, being wounded, and growing faint from loss of blood and excessive action, plunged into the sea with his sword in his hand, and swam to the boats."

The English accounts vary but little from this. They cast great blame upon the lieutenant who commanded the launch, for pushing off the shore, instead of drawing in to the assistance of the attacked party. By his own account, he misunderstood the signal of Cook in waving his hat. By this unfortunate mistake, however, the pinnace became so crowded, that the marines were unable to act efficiently for the protection of their comrades and commander. According to the same authority, Capt. Cook expostulated with the na-

tives for their conduct; and when approaching the pinnace, and covering the back of his head with his hand, to shield it from the stones, was struck with a heavy club, which so nearly stunned him that he fell into the water, when he was stabbed in the back by another Indian, and, after struggling for some time in the water, was finally despatched by another blow from a club. A part of his bones were finally recovered, and committed to the deep with the usual ceremonies and honors.

Thus unfortunately perished one of the most sagacious, enterprising, and successful navigators of his own, or of any other times. He was temperate, patient of toil and hardship, of cool and determined courage, and great presence of mind, of plain manners, and humane disposition. It is possible that the confidence arising from great success rendered him for once too little observant, or too regardless, of the perils to which he was exposed. But his faults he expiated with his life, while his virtues have gained for the whole world a rich and lasting reward.

The expedition, soon after this melancholy event, sailed again for the north, but did not effect any great discovery. Capt. Clerke, who had thrice circumnavigated the globe, died at Kamschatka. The naturalist, Mr. Anderson, had died at Onalaska the year before. From the northwest coast they sailed to China, and reached home after an absence of four years and nearly three months. War had broken out between England and France before they returned; but, to the great honor of the latter, the cruisers were ordered to treat the scientific expedition as a friendly power.

In order to have before us at one view the

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merit of the discoveries of Capt. Cook, it is worth while to recapitulate them, and to consider how much they have affected the commercial interests of civilized nations. He discovered New Caledonia and Norfolk Island, New Georgia and Sandwich Land, and many smaller islands in the Pacific; surveyed the Society Islands, the Friendly Islands, and the New Hebrides; determined the insularity of New Zealand; circumnavigated the globe in a high southern latitude, so as to decide that no continent existed north of a certain parallel; explored the then unknown eastern coasts of New Holland for two thousand miles; determined the proximity of Asia to America, which the discoverer of Behring's Straits did not perceive; and discovered (or rediscovered, if it be true that a Spanish navigator had seen them before, of which there is some slight evidence) the most important group in the Pacific; and, at any rate, so brought the Sandwich Islands to the knowledge of the civilized world, as to make their value appreciated. What perhaps is quite as important and quite as much to his honor, "his surveys afford the materials of accurate geography." He was such a vigilant and untiring observer, and availed himself so constantly of all the improvements suggested by science, that his errors are very few, and he laid down the configuration of the coasts with so much correctness as to have attracted the notice, and received the willing praise, of the most accomplished seamen who have succeeded him. It was probably owing to him, that an English colony was established in New Holland, and possibly, although the influence is more remote, that an English settle-

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ment has been made in New Zealand. The fur trade took its origin with his last voyage, and his intercourse with the islands of the Pacific laid the foundation of the abundant navigation which now cheers those distant seas. His home was upon the sea, and no man has done more to make every ocean familiar to others.

On the north side of the little bay of Kealakeaua, in Hawaii, the natives point out a rock, jutting into the water so as to afford a convenient landing place, as the spot where Capt. Cook fell. A stump of a cocoa-nut tree is near by, where they say he expired. The top of the tree has been carried to England, and is rightfully treasured among the monuments of enterprise and courage in the Museum of Greenwich Hospital. On the stump, which has been capped with copper for its preservation, is an inscription, of which the following is a part: —

NEAR THIS SPOT

FELL

CAPTAIN JAMES COOK, R. N.,

THE

RENOWNED CIRCUMNAVIGATOR,

WHO

DISCOVERED THESE ISLANDS,

A.D. 1778.

WILLIAM FALCONER.

William Falconer, one of the most truthful "poets of the sea," was the son of a poor Edinburgh barber. He was born in 1730. Two other children, who with himself made up the family of his father, were deaf and dumb. His education, as he himself said, was confined to reading, writing, and a little arithmetic; but he eagerly grasped after whatever knowledge lay in his way. He was, however, early shut out from even his small opportunities for learning, by being sent to sea on board a Leith merchant ship. To this, he is supposed to refer in a passage in one of his poems.

> "On him fair Science dawn'd in happier hour,
> Awakening into bloom young Fancy's flower;
> But soon adversity, with freezing blast,
> The blossom wither'd, and the dawn o'ercast,
> Forlorn of heart, and by severe decree,
> Condemn'd *reluctant* to the faithless sea."

Before he was eighteen years of age, he had risen to the rank of second mate in the Britannia, a vessel engaged in the Levant trade. In one of his voyages in this vessel, he was shipwrecked off Cape Colonna, in Greece; and it is here that he lays the scene of "The Shipwreck," the poem by which he will long be remembered. In 1757, he was promoted to the *Ramilies* man-of-war; and as an opportunity was here afforded of improving his literary taste, he is said to have studied with great assiduity. Certain it is that he gained a very good knowledge of the French, Spanish,

and Italian languages, and learned something of the German. In the Ramilies, he was subjected to a disaster of more magnitude even than his former shipwreck. While making for Plymouth, the ship struck upon the shore; and of a crew of 734 men, only 26 escaped with their lives; among these was the poet. He had already given some evidence of poetic talent, and, two years after this, in 1762, he published the *Shipwreck*, which he dedicated to the Duke of York. It was subsequently greatly enlarged and improved, and has taken rank among the classical poems of England. Few poets have had such opportunities for observation of nautical life as Falconer enjoyed, and fewer still have had the experience which would enable them to commemorate so fearful a disaster.

The poem seems to be a picture of real life. The sights and sounds of the sea, — the gentle calm at sunset, when the ocean

"Glows in the west, a sea of living gold!" —

the still evening, — the silent, sombre midnight, — the stories and songs of the sailors, — the call of the boatswain, — the sudden rise of the tempest, — the groaning, heaving, straining, of the storm-driven ship, and its final destruction upon the romantic promontory of old Sunium, — these are but a few of the points to which the genius of the poet directs the mind of the reader. The scene of the poem is not among the least happy circumstances of the work. It is laid in one of the most charming portions of the shore of a country whose bare name is suggestive of almost all that is beautiful or profound in ancient literature and art, and of much that is exciting in the history of

modern freedom. "In all Attica," says Byron, "if we except Athens itself and Marathon, there is no scene more interesting than Cape Colonna. To the antiquary and artist, sixteen columns [the remains of an ancient temple] are an inexhaustible source of observation and design: to the philosopher, the supposed scene of some of Plato's conversations will not be unwelcome; and the traveller will be struck with the beauty of the prospect over 'isles that crown the Ægean deep;' but for an Englishman, Colonna has yet an additional interest, as the actual spot of Falconer's Shipwreck. Pallas and Plato are forgotten in the recollection of Falconer and Campbell —

> 'Here in the dead of night, by Lonna's steep,
> The seaman's cry was heard along the deep.'"

A peculiarity of this poem is, that, while its poetic merits are great, it is a safe guide to practical seamen. It shows a thorough acquaintance with the art of navigation, and is replete with directions which have been approved by naval officers of distinguished character. Falconer was himself a thorough seaman. The "Shipwreck," in the words of one of his biographers, "is of inestimable value to this country, since it contains within itself the rudiments of navigation; if not sufficient to form a complete seaman, it may certainly be considered as the grammar of his professional science. I have heard many experienced officers declare, that the rules and maxims delivered in this poem, for the conduct of a ship in the most perilous emergency, form the best, indeed the only opinions which a skilful mariner should adopt." This very characteristic, which adds

much to the reality of the scene described, has been thought to detract a little from the interest with which a landsman would read the poem. To *his* ears, "bow-lines" and "clue-lines," "clue-garnets," "jears," "halliards," and "spilling-lines," sound technical and barbarous, while to the sailor they afford so many proofs of the capacity of the poet, and the truth of his story. We shall give a few quotations to show the character of the poem. He thus introduces the doomed vessel to the reader: —

"A ship from Egypt, o'er the deep impell'd
By guiding winds, her course for Venice held;
Of famed Britannia were the gallant crew,
And from that isle her name the vessel drew.
* * * * * *
Thrice had the sun, to rule the varying year,
Across th' equator roll'd his flaming sphere,
Since last the vessel spread her ample sail
From Albion's coast, obsequious to the gale.
She o'er the spacious flood, from shore to shore,
Unwearying, wafted her commercial store.
The richest ports of Afric she had view'd,
Thence to fair Italy her course pursued;
Had left behind Trinacria's burning isle,
And visited the margin of the Nile.
And now that winter deepens round the pole,
The circling voyage hastens to its goal.
They, blind to Fate's inevitable law,
No dark event to blast their hopes, foresaw;
But from gay Venice soon expect to steer
For Britain's coast, and dread no perils near."

The ship arrives at Candia, evening comes on, and midnight: —

"Deep midnight now involves the livid skies,
While infant breezes from the shore arise;
The waning moon, behind a watery shroud,
Pale glimmer'd o'er the long protracted cloud;

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A mighty ring around her silver throne,
With parting meteors cross'd portentous shone.
* * * * * *
Now Morn, her lamp pale glimmering on the sight,
Scatter'd before her van reluctant Night.
She comes not in refulgent pomp arrayed,
But sternly frowning, wrapt in sullen shade.
Above incumbent vapors, Ida's height.
Tremendous rock! emerges on the sight.
North-east the guardian isle of Standia lies,
And westward Freschin's woody capes arise.
With winning postures, now the wanton sails
Spread all their snares to charm th' inconstant gales;
The swelling stud-sails now their wings extend,
Then stay-sails sidelong to the breeze ascend.
While all to court the wandering breeze are placed;
With yards now thwarting, now obliquely braced."

The ship at last leaves the harbor, and sails away.

"The natives, while the ship departs the land,
Ashore with admiration gazing stand.
Majestically slow, before the breeze,
In silent pomp she marches on the seas;
Her milk-white bottom casts a softer gleam,
While trembling through the green translucent stream.
The wales, that close above in contrast shone,
Clasp the long fabric with a jetty zone.
Britannia, riding awful on the prow,
Gazed o'er the vassal wave that roll'd below;
Where 'er she moved, the vassal waves were seen
To yield obsequious, and confess their queen.
* * * * * * *
High o'er the poop, the fluttering wings unfurl'd
Th' imperial flag that rules the watery world.
Deep blushing armours all the tops invest,
And warlike trophies either quarter drest;
Then tower'd the masts; the canvass swell'd on high;
And waving streamers floated in the sky.
Thus the rich vessel moves in trim array,
Like some fair virgin on her bridal day.
Thus, like a swan she cleaves the watery plain;
The pride and wonder of the Ægean main."

Their hopes of a prosperous voyage were soon shaken. The breeze freshens into a gale; the clouds become blacker and blacker; the main-sail splits; the crew are all upon deck, and all anxious.

"His race perform'd, the sacred lamp of day
Now dipt in western clouds his parting ray;
His sick'ning fires, half-lost in ambient haze,
Refract along the dusk a crimson blaze;
Till deep immerged the languid orb declines,
And now to cheerless night the sky resigns!
Sad evening's hour, how different from the past!
No flaming pomp, no blushing glories cast;
No ray of friendly light is seen around;
The moon and stars in hopeless shade are drown'd."

To relieve the laboring vessel, the guns are thrown overboard; but the relief is but temporary. She springs a leak, all hands man the pumps, but the leak gains upon them. The mizen-mast is cut away. Still the storm swept them along, by "Falconera's rocky height," and towards the main land of Greece itself.

"Now, borne impetuous o'er the boiling deeps,
Her course to Attic shores the vessel keeps;
The pilots, as the waves behind her swell,
Still with the wheeling stern their force repel.
* * * * * * *
So they direct the flying bark before
Th' impelling floods, that lash her to the shore.
As some benighted traveller, through the shade,
Explores the devious path with heart dismay'd;
While prowling savages behind him roar,
And yawning pits and quagmires lurk before.
* * * * * * *
But now Athenian mountains they descry,
And o'er the surge Colonna frowns on high;
Beside the cape's projecting verge are placed
A range of columns, long by time defaced;

First planted by devotion to sustain,
In elder times, Tritonia's sacred fane.
Foams the wild beach below, with maddening rage,
Where waves and rocks a dreadful combat wage.

* * * * * *

And now, while wing'd with ruin from on high,
Through the rent clouds the ragged lightnings fly,
A flash, quick glancing on the nerves of light,
Struck the pale helmsman with eternal night.

* * * * * *

The vessel, while the dread event draws nigh,
Seems more impatient o'er the waves to fly;
Fate spurs her on; thus issuing from afar,
Advances to the sun some blazing star;
And, as it feels th' attraction's kindling force,
Springs onward with accelerated course.
With mournful look the seamen eyed the strand,
Where Death's inexorable jaws expand;
Swift from their minds elapsed all dangers past,
As, dumb with terror, they beheld the last.

* * * * * *

The genius of the deep, on rapid wing,
The black eventful moment seem'd to bring;
The fatal sisters on the surge before,
Yoked their infernal horses to the prore."

The ship is near its end.

"Uplifted on the surge, to heaven she flies,
Her shattered top half-buried in the skies,
Then headlong plunging thunders on the ground,—
Earth groans! air trembles! and the deeps resound.
Her giant bulk the dread concussion feels,
And quivering with the wound, in torment reels.
So reels, convulsed with agonizing throes,
The bleeding bull beneath the murderer's blows.
Again she plunges: hark! a second shock
Tears her strong bottom on the marble rock.
Down on the vale of Death, with dismal cries,
The fated victims shuddering roll their eyes
In wild despair, while yet another stroke,
With deep convulsion, rends the solid oak;
Till, like the mine, in whose infernal cell
The lurking demons of destruction dwell,
At length asunder torn, her frame divides;
And crashing, spreads in ruin o'er the tides."

If we had not extended these extracts almost too far already, it would be pleasing to give more of the separate pictures of beauty in which the poem abounds. Of the crew, but three were saved, and Falconer was one of them. His genius has invested Cape Colonna with an interest not its own, and the wreck of the Britannia may be remembered as long as the destruction of the Spanish Armada.

After publishing this poem, Falconer, by the advice of the Duke of York (to whom, as before mentioned, he had dedicated it), left the merchant service, and entered the *Royal George* as midshipman. After this ship was paid off, rather than wait until his time of service would allow him to become lieutenant, he accepted the appointment of purser on board the *Glory* frigate. It was not long before this vessel was laid up in ordinary, and the poet (who in the mean time was married to an accomplished lady) engaged in various literary pursuits. The most important of them was the compilation of a *Universal Marine Dictionary*, a work which has been approved by the professional men of the navy, as of great utility.

Falconer is said to have been in person slender and somewhat below the middling height, with a weather-beaten countenance, and an address rather awkward and forbidding. His mind was inquisitive and keenly observing. He was prone to controversy and satire, but full of good humor, and, like most of his profession, frank, generous, and kind. Having removed to London, he seems to have suffered from poverty. Entering into the politics of the times, he wrote a satire on Lord

Chatham, Wilkes, and Churchill, which failed. In 1768, Mr. Murray, a bookseller, proposed that he should unite with him as a partner in business, which it is probable that he would have done, had he not been appointed to the pursership of the frigate *Aurora*, bound to India. The frigate was to carry out three gentlemen, as supervisors of the affairs of the East India Company, and he was promised the office of private secretary; so that his prospects seemed favorable. The ship sailed from England, Sept. 30, 1769, touched at the Cape as is usual, and thenceforward was never heard of. She probably foundered in the Mozambique Channel, and no "tuneful Arion" was left to tell the melancholy fate of the lost. It seems singular that he who most eloquently and beautifully commemorated the perils of the sea, should himself have been so often subjected to them; and should, at last, be mysteriously gathered to the profound and secret caverns of the deep, as if the waves were greedy of the whole of him who had so well sung of their smiles and their wrath.

JOHN HUNTER.

One of the most distinguished names in the modern medical profession is that of John Hunter. He was born at Kilbride, in Scotland, July 14, 1728, the youngest of ten children. His father's family was respectable, cultivated their own small estate, and will be long remembered for having produced two men, who at the same time attained the very highest eminence in the same profession; William Hunter, an elder brother of John, having been hardly less distinguished than the subject of the present notice. John, as the youngest child, was unfortunately brought up with great indulgence, and after the death of his father, which happened when he was ten years of age, exhibited the effects of it in a wayward disposition, and an aversion to any thing like regular study. It is said that he was with difficulty taught the elements of reading and writing; and the attempt to teach him Latin was abandoned after a short trial, with the unsatisfactory assurance of an entire want of success. The time came, however, when his devotion to country amusements was necessarily interrupted, and he was obliged to determine what he should do for a living. His father's property was small, and the greater part of it had been given to the eldest son. John arrived at the age of nearly twenty years, without giving signs of any peculiar thoughtfulness, and with no determination as to the future. His sister had married a carpenter or cabinet-maker in Glasgow; and John,

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seeking employment for his hands rather than his head, became his apprentice. How long, under favorable circumstances, he would have continued to make chairs and tables, it is impossible to say; but the early failure of his master in business, threw him out of employment. Very probably he considered this a great misfortune, but it was the occasion of his subsequent distinction. Such a mind as his would not indeed, under any circumstances, have remained always harnessed to mere mechanical pursuits; but he might have toiled long before coming to understand his own capacities, had he not been compelled to look elsewhere for the means of a daily livelihood.

Sometime before this, William Hunter, though at first destined by his family for the church, had turned his attention to medicine; and, having studied very successfully with the celebrated Dr. Cullen, had gone to London with a recommendation to Dr. James Douglass. Though early deprived of this kind friend by his death, he determined, after some discouragements and difficulties, to give instruction in anatomy and surgery. In these departments he obtained great reputation, and at the time that John was thrown out of business, was in the height of his fame. The success of the elder brother determined the younger to apply to him for assistance. His ambition was perhaps somewhat awakened to escape from the unsatisfactory life he had led. He therefore wrote to his brother, requesting permission to visit London, expressing the hope that he might render him some assistance in his anatomical pursuits, and at the same time suggesting, that if his application was unsuccessful, he might enter the army.

The answer to the letter was cordial, and contained an invitation to proceed immediately to London. He accordingly set off on horseback, and arrived in the metropolis, the scene of his future most distinguished labors, in September, 1748.

The mind which had so long lain dormant, seemed now to awake. The scenes by which he was surrounded, the lectures which he heard, the conversations of his brother, and of other intelligent men, all conspired to excite his interest in a study, which he pursued until his death, forty-five years afterwards, with ever-increasing enthusiasm and unrivalled success.

He reached London about a fortnight before his brother began his course of lectures; and Doctor Hunter, as we are informed, immediately gave him an arm to dissect so as to exhibit the muscles, at the same time instructing him how it should be done. The raw apprentice succeeded beyond expectation. Another arm was given him to be prepared in a manner more delicate and difficult. The arteries, as well as the muscles, were to be preserved and exhibited. This was done so much to the satisfaction of Dr. Hunter, that he assured his brother of success as an anatomist, and that he should not want employment.

From this time his progress was most rapid. Mr. Cheselden, at that time extremely distinguished as a surgeon, allowed him to attend at Chelsea Hospital, during the summer of 1749; and by the next winter, he was adjudged by his brother capable of teaching anatomy. To this he devoted himself, and thus greatly relieved Dr. Hunter, whose increasing business left him

very little time to attend to his pupils. The next year he was equally assiduous in attendance upon the hospitals, and allowed no difficult operation to escape his notice. In 1753, he entered St. Mary's Hall, Oxford, as a gentleman commoner, though with what purpose hardly appears evident, since he did not at all relax his professional studies. During the winter of 1755, his brother admitted him to a partnership in his lectures. He devoted himself at this time, and for years subsequently, to the study of human anatomy, and not only acquired all that was previously known of the wonderful workmanship of our bodies, but carried his researches into fields before unthought of. The preparations which he made for the uses of the lecture room and the museum, were objects of general admiration at that time, when such works were comparatively unknown. At the same time he laid the foundation of another branch of knowledge very imperfectly studied before, by the diligent pursuit of which he had "placed himself, for many years before his death, by universal acknowledgment, at the head of living anatomists, and was regarded, indeed, as having done more for surgery and physiology than any other investigator of these branches that had ever lived."

This great study has been since called *comparative anatomy*. Finding many things in the human body difficult to be understood, he began to compare the structure with that of inferior animals, where the similar parts were more simple. It was his object in this, to comprehend more thoroughly the human economy and the general laws of life. To this he was gradually led, not knowing indeed the wide fields which were open-

ing before him, but ever pursuing his way with the greatest enthusiasm mingled with the utmost care. His time, his labor, his fortune, as fast as he acquired any, were devoted to this purpose. While his income was yet small, he purchased a piece of ground at Brompton, near London, and built a house to contain his collection. The most familiar animals were sometimes of the greatest consequence to him in his researches, but he also was anxious to obtain those which were rare. For this purpose he purchased such foreign animals as came in his way, entrusted them to showmen to keep until they died, and, by way of compensation, received of them in return the bodies of other animals which he could not obtain when living. In this way there was a constant reciprocation of favors between himself and the keeper of the wild beasts in the Tower, and also the proprietors of other menageries in town.

By these pursuits, added to the fatigue of delivering lectures and attending to private students, his health became so much impaired that he was advised to go abroad. Accordingly, having received the appointment of surgeon on the staff, he went with the army to Bellisle, and served there and in Portugal till the close of the war in 1763. In this school he obtained his knowledge of gun-shot wounds, a subject upon which he afterwards published a treatise in connection with his remarks on the blood. On returning to London, he devoted himself again with undiminished assiduity to his former pursuits. He kept several animals of different kinds upon his premises, in order the better to observe their habits and instincts. He was sometimes put in great peril by

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these creatures, which were not always of the gentler kind. "Among them," says his biographer, "was a small bull which he had received from the queen, with which he used to wrestle in play, and entertain himself with its exertions in its own defence. In one of these conflicts the bull overpowered him and got him down; and, had not one of the servants accidentally come by and frightened the animal away, this frolic would probably have cost him his life." "On another occasion, two leopards, that were kept chained in an out-house, had broken from their confinement, and got into the yard among some dogs, which they immediately attacked. The howling this produced alarmed the whole neighborhood. Mr. Hunter ran into the yard to see what was the matter, and found one of them getting up the wall to make his escape, the other surrounded by the dogs. He immediately laid hold of them both, and carried them back to their den; but as soon as they were secured, and he had time to reflect upon the risk of his own situation, he was so much affected that he was in danger of fainting."

His time was now fully occupied. It is said by one of his eulogists, that he habitually worked twenty hours out of the twenty-four. Certainly he allowed himself but four or five hours for sleep. His house was the constant resort of students who were attracted by his fame. Some of these became afterwards much distinguished for their attainments and skill. None of them perhaps has been more widely known than Edward Jenner, the discoverer of the powers of vaccination as a preventive of the small pox. Jenner remained during his life a friend and correspondent of Mr.

Hunter; and it is not improbable, as has been suggested, that we are in a great degree indebted for that most beneficent discovery, to the "love of science, and the spirit of research, kept alive in the intelligent pupil by the precepts and example of the great master."

In February, 1767, Mr. Hunter was elected a fellow of the Royal Society. That he might turn this honor to the greatest account, he prevailed on two of the members, Dr. George Fordyce and Mr. Cummings (an eminent watchmaker), to go with him, after the regular meetings of the society, to some coffee-house, for the purpose of more extended philosophical discussion. This voluntary meeting was soon joined by other distinguished members, among whom were Sir Joseph Banks, Dr. Solander, Dr. Maskelyne (the eminent mathematician and astronomer), and Mr. Watt, of Birmingham, so celebrated for his discoveries and improvements connected with the steam engine.

During this year, he was so unfortunate as to break the great tendon which extends from the calf of the leg to the heel, and is called the *tendo Achillis*. While confined by this accident, he devoted his attention very carefully to the subject of broken tendons; so ready was he to seize upon circumstances apparently adverse, to aid him in discoveries in his favorite science.

He was married in 1771, to Miss Horne, the eldest daughter of Mr. Horne, the surgeon to Burgoyne's regiment of light horse. But, although the cares of his family increased, and his private practice as well as public duties made such continual demands upon his time, yet he devoted great attention to his already large collec-

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tion. The best suite of rooms in his house was filled with his preparations; and to pursuits in connection with them, he regularly devoted the hours of every morning, from sunrise until eight o'clock, as well as other parts of the day in which he was not otherwise occupied. The facts in anatomy and physiology which he established, it would not be possible in this sketch to state; but they were such as to place him greatly in advance of his age, and to give him undoubtedly the first rank among modern anatomists, physiologists, and surgeons.

With the extension of his reputation came the multiplication of testimonials to his learning and genius. In 1776, he was appointed Surgeon Extraordinary to his Majesty. In 1781, he was chosen member of the Royal Society of Science and Belles Lettres at Gottenberg; and in 1783, member of the Royal Society of Medicine and the Royal Academy of Surgery at Paris; and in 1786, was appointed deputy surgeon general to the army. We mention these circumstances simply to show the estimation in which he was held by his contemporaries; for although such testimonies are but secondary evidences of the real worth of those who receive them, yet they are deserving of no small consideration as coming from the highest scientific talent which the world possessed.

As Mr. Hunter spared no expense to make as complete as possible the collection to which he devoted so much of his time, lavishing indeed upon it and other professional pursuits nearly all his income, he fortunately felt it necessary, especially after a severe illness, in 1776, to leave it in such a state of arrangement, that his family, after

his decease, should be able to dispose of it for something like its full value. He obtained, in 1783, a new and larger house than the one he had previously occupied; and erected on an adjacent lot, a large building having a room fifty-two feet long and twenty-eight wide, with a gallery all round, and lighted from the top. In this he placed his museum. His name became so celebrated in the department of comparative anatomy, that almost every new animal brought to the country was shown to him, many were given to him, and of those that were for sale he commonly had the refusal. A young elephant had been presented to the queen; it died, and the body was handed over to Mr. Hunter for examination. Electrical eels were brought to England from Surinam. He obtained some specimens, and published an account of them in the Philosophical Transactions. Animals as different as the whale and the honey-bee, the rhinoceros and the industrious ant, occupied his attention, as parts of the great animate kingdom, which, in some points, resembled each other. It being impossible to preserve the form and natural appearances of many of his specimens, he kept a draughtsman in his house, whose labors might be always under his eye, and whose professional skill might be entirely devoted to this one peculiar field. At the time of his death, the preparations amounted to more than ten thousand; arranged, says one of his biographers, so as "to expose to view the gradation of nature, from the most simple state in which life is found to exist, up to the most perfect and most complex of the animal creation — man himself." The extreme beauty of these prepara-

tions is said to be apparent even to the unlearned, and "their scientific value is such as to render the collection one of the most precious of its kind in the world. It is certainly one of the most splendid monuments of labor, skill, and munificence, ever raised by one individual."

In the spring of 1786, Mr. Hunter had a severe illness, from the effects of which he seems never to have entirely recovered; he remained subject to affections of the heart upon any occasion which excited his mind or demanded great bodily exertion. The peculiarities of his disease, which was in some respects novel and interesting, are very fully detailed by his biographer, the symptoms having been described by himself with the greatest coolness and precision. His death was very sudden, on the 16th of October, 1793. After having, in his private room, succeeded much to his satisfaction in completing a delicate preparation, he went to St. George's Hospital, according to his custom. Here something occurred which considerably irritated him. He endeavored to repress his feelings; and going into an adjoining room, as he was turning to address one of the physicians present, he gave a groan, and dropped down dead.

Of a noble and distinguished Spanish painter it was said "he died poor and famous." Mr. Hunter was certainly famous; and if he did not die poor, he neither died rich. He left little besides his collection, which after a time was purchased by the British government for £15,000, and subsequently given, under certain conditions, to the Royal College of Surgeons of England. His public spirit constantly encroached upon his

professional income; and though receiving during the later years of his life several thousand pounds a year, he had not the disposition nor the faculty to keep what he got. To the poor and distressed, he gave not only medical assistance, but, if necessary, pecuniary aid. A brief note to his brother, sent by the hands of one who had applied to him for professional advice, illustrates his character and practice: "Dear Brother, — The bearer is desirous of having your opinion: I know nothing of his case; he has got no money and you don't want any, so that you are well met."

To gratify his friends, he allowed a portrait of himself to be painted by Sir Joshua Reynolds. It was engraved by an artist of the name of Sharp, and the engraving has become of considerable note in the history of the art. When Lavater saw it, he said, "This man thinks for himself."

John Hunter is a memorable example of the results of genius, aided by extreme diligence and determination, and directed to one great end. The scientific value of his researches was not understood by his contemporaries: perhaps it is not too much to say, they were not fully comprehended by himself. He did not know how far he was in advance of his own generation. For particular knowledge on these points, the reader must be referred to the extended biographies of this remarkable man, and to the opinions which are coming to be more and more fully entertained and expressed by later writers on medical science. Of his efforts in one department, a recent distinguished writer has remarked, "He found surgery a mere mechanical art, hardly emancipated from

its connection with the barbers; he left it a beautiful science, inferior to none in rank and interest, or in the capability of alleviating human sufferings. * * * We could well spare the writings of any surgeon excepting Hunter; they would hardly be missed; but if *his* researches and writings were obliterated, and their influence withdrawn, the very heart's blood of surgery would be lost.*

His mind was large, generous, and noble; and with the virtues, he had some of the faults of which such minds are capable. It should also be said that even his profound and original powers could never rise entirely above the misfortune of his neglected early education. He could never become a finished writer or speaker. Indeed he was so sensible of his deficiencies as a lecturer, that he is said to have habitually taken thirty drops of laudanum, before meeting his audience. This was a heavy penalty to pay to early neglect, but is not without its serious lesson to those who would trust to native genius while they disregarded its diligent cultivation. We reverence the genius of John Hunter; we should not reverence it the less and might delight in it the more, had it been freed from the clogs of an imperfect education. As it is, we pay the most willing tribute to the perseverance and effort, the singleness of purpose, and unwearied diligence, which could triumph over so many obstacles, and make such wide and noble acquisitions.

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* Wm. Lawrence, Esq., F.R.S.

NATHAN SMITH.

In no one of the learned professions, perhaps, can so many examples be found of eminence, attained after a youth of unassisted struggle, as in that of medicine. The late President Dwight, of Yale College, was in the habit of giving the class under his charge, a brief sketch of the life of Dr. Smith, among others, to encourage them in surmounting difficulties. From an origin quite humble, and circumstances very adverse, he raised himself to the head of two distinguished medical schools (one of which he was the means of founding), and to a rank in his profession equal to that of any one in New England.

Nathan Smith was born of respectable parents, in the town of Rehoboth, Mass., on the 30th of September, 1762. His father soon removed to Chester, Vermont, where the boy grew up with the ordinary advantages for learning afforded by the common country schools, while his time was, for the most part, spent upon his father's farm. He was, however, frequently exposed to the hardships attendant upon all pioneers in a new country. While in pursuit of wild game, he was on one occasion left by his companions at some distance from home with a small supply of provisions. His stock failed him before they returned, and a sudden thaw rendered it impossible to travel. He was obliged to remain several days with nothing to eat but the flesh of the animals he had killed. With great difficulty he was at

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last enabled to reach a house; but the result of his exposure was a severe fit of sickness, which confined him for many months. During the latter years of the revolutionary war, he enlisted in the Vermont militia, and was stationed on the borders of the State to repel the incursions of the Indians. In this service he endured the hardships common to the early settlers, in their peculiarly harassing warfare against a peculiarly artful and cruel foe. When at home, he was an industrious laborer on the farm, except when he taught a school during the winter months.

Thus he lived till he was twenty-four years old, when an event occurred, unimportant in itself, which led to an entire change in his life. Dr. Josiah Goodhue, the most distinguished surgeon in the region, happened to perform a surgical operation, at which Mr. Smith was present. Upon other spectators, this scene produced no uncommon effect; but in him it excited a curiosity to know more of the structure of the human frame, and the laws of life. It is generally true that the causative impulses of human actions come from within and not from without. Circumstances merely afford an opportunity for the genius to display itself. Why were not the others present on the occasion referred to, incited to the same course of study as Mr. Smith? He soon requested Dr. Goodhue to receive him as a student; but that gentleman, after inquiring into his previous attainments, and learning how small they were, firmly though kindly declined to accede to his request. He told him that the profession of medicine was low, that one reason of it was the imperfect education of its practitioners, and the only way to elevate it was to encourage those

young men alone to engage in it who were properly qualified. The Doctor, however, kindly added that he would receive Mr. Smith as a student, if he would put himself under some qualified instructor, and learn enough to enable him to enter the freshman class at Harvard University.

This wise advice, which might have discouraged any but one determined from the first to be thorough in his profession, did not deter Mr. Smith from his course. After studying a sufficient time with the Rev. Mr. Whiting, of Rockingham, Vt. he became a pupil of Dr. Goodhue, with whom he continued three years. A friendship was formed between master and pupil during this time, founded upon mutual respect, which continued without change till the death of the latter.

After leaving the office of Dr. Goodhue, Mr. Smith, to whom we must now give the title of Dr., established himself as a physician in Cornish, N. H. We are not informed what was his success during these his first years of professional life; but presume it was much the same with that of other young men, who with little aid from friends are obliged to fight their way to respectability and distinction, against the ignorance and prejudices of those on whom they have to depend in part for reputation and support.*

* We remember to have heard an anecdote of Dr. Smith, which illustrates his shrewdness and determination. Not long after he established himself at Cornish, and while he was patiently waiting for some requisition upon his professional services, a company of young men, standing about the tavern door, on the evening of the fourth of July, and rather more than commonly excited, saw a poor lame goose in a flock, feeding upon the green, — (when was a flock of geese ever seen in which there was not at least one

After practising a few years, feeling probably his need of more ample instruction than he had received, he repaired to Harvard University, and attended the lectures on medicine and surgery; while he also availed himself of the opportunity to increase his knowledge of natural philosophy,

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lame one?) — and immediately determined to have some sport with the new doctor. Accordingly they despatched a messenger with all haste to inform Dr. Smith, that a patient, who had unfortunately broken his leg, was waiting for him at the tavern. Not a moment was to be lost, and, taking with him all the necessary apparatus, he hastened to obey the summons. As he drew near the house, and saw the preparation for his reception, his quick mind began to suspect a trick; but he proceeded without hesitation to the door, where, amid the ill-concealed tittering of the crowd, he met the inn-keeper, who, entering fully with his customers into the joke, informed him that the patient was within. Accordingly, preceded by the tavern-keeper, and followed by the crowd, ready to burst with delight at the anticipated surprise and chagrin of the doctor, he entered the great hall of the house, where sure enough the goose was extended in all honor upon a bed. The doctor, without hesitation or the least show of surprise, advanced to the bed, and having with scrupulous care examined the broken limb, prepared his splints, reduced the fracture, and bound it up in the most scientific manner. He then, with extreme gravity, directed the tavern-keeper to pay particular attention to the patient, on no account to suffer him to be moved from the bed for at least a week, but to feed him plentifully with Indian meal and water. He then as gravely took his leave. Thus far all was pretty well, although matters were a little sober to be sure. The next day, however, the joke became really quite serious; when a liberal bill for professional services was sent to the inn-keeper, and to his mortification he found he was obliged to pay it. The affair was soon known, and the Doctor found himself suddenly in possession of that reputation which in Yankee land always attaches to one who evidently knows how to take care of himself. Men began to respect him, and the foundation of a good practice was quite unexpectedly laid.

and of other subjects necessary to his profession, in which his education had been most defective.

After receiving the degree of Bachelor of Medicine, he returned again to resume his practice at Cornish, and, besides that, to devise some method of raising the character of the medical profession in the part of the country where he lived. The majority of physicians, in the larger part of New Hampshire and Vermont, were uneducated and without skill. In process of time, the medical institution in connection with Dartmouth College was planned; and, in 1798, Dr. Smith was appointed Professor of Medicine. For twelve years he was the only professor in the school. The resolution required by this undertaking will be evident when it is remembered, that he had, almost literally, to create every thing needed in the institution. There was no chemical apparatus, no anatomical preparations, no medical library, no building for lectures and operations, and no funds for obtaining these requisites. It was not till after his exertions had made the school a blessing to the community, and had gained for it a wide celebrity, that the hand of the legislature was stretched out in charity. The number of pupils was not at first large; but, during the last years that he remained at Hanover, averaged about sixty.

After removing from Cornish to his new situation in connection with Dartmouth College, he resolved to fit himself still more thoroughly for the responsible station which he held; and accordingly he again left his practice, and spent a year in Great Britain, principally in attending the lectures at Edinburgh, where Dr. Black, the cele-

brated Professor of Chemistry, then very aged, and the younger Monro, were attracting pupils by their discoveries and their lectures. He also spent some time in the hospitals of London. Thus prepared with confidence in his own attainments, he returned to diffuse his knowledge where it was most needed. The influence of the institution which he was so prominent a means of establishing, it would be very difficult fully to estimate. It has sent out nearly eight hundred physicians, who have gradually taken the places of their less skilful predecessors, so that the profession in New Hampshire and Vermont ranks as high for attainment and general excellence as in any part of the country. The school has gone on with general prosperity, numbering among its pupils some of the most distinguished physicians in the land, and, up to the present time, keeping pace with the rapid advancement of medical knowledge, and, as far as possible, helping it forward.

In the autumn of 1813, Dr. Smith, having been previously invited to the medical institution just established in connection with Yale College, removed to New Haven. His sphere of labor was perhaps by this change somewhat enlarged, and, it may be, rendered more agreeable. His life was not less active than before, since he was frequently called to the adjoining States, as well as to the distant parts of his own. He also gave another course of lectures at Dartmouth, one at the University of Vermont, and two courses at Brunswick, Maine. About the middle of July, 1828, he was seized with a severe illness, from which he seemed never entirely to recover. During the months of autumn he remained in an enfeebled

state, although he continued to perform the laborious duties of his profession. About the first of January, 1829, he was attacked with a severe influenza; and although this yielded in part to the appropriate remedies, yet on the 13th of the month, there were slight symptoms of paralysis. These increased until the 26th of the month, when he died, in the sixty-seventh year of his age.

It is not the object of these brief sketches to eulogize the subjects of them, or we might dwell at greater length on the character and peculiar professional ability of Dr. Smith. In many respects, his life is full of instructive lessons. Having decided, although at a comparatively late age, on his profession, he devoted himself to it with untiring energy. He was determined to be thorough, and spared neither pains nor expense to make himself so. And in this he had no one to assist him. He was obliged almost entirely to depend upon his own exertions for the means of education; but, instead of resting satisfied on this account with imperfect knowledge, he seemed only the more anxious to obtain a thorough acquaintance with the mysteries of his profession, and submitted the more readily to a course which was at that time almost unknown in New England.

It would certainly have been according to the common course of things, for the young practitioner in an obscure country village, to make the attainments of his professional brethren in the immediate vicinity, his standard of excellence. It would not have been thought singular, if he had assiduously devoted himself to enlarging his practice, and gaining the most liberal pecuniary reward. That he did neither of these things, but

loved science better than the rewards of science, and looked beyond the narrow horizon of his neighborhood, in order to learn the discoveries of the most distinguished medical men in the world, and find out all that the wisest could teach, is in itself a mark of an uncommon understanding. He was not mercenary: he was not narrow minded. By the course he pursued, he certainly acquired less wealth than he might otherwise have obtained, but he made himself "the father of medical science in two states; while the influence of his instructions was felt, in a greater or less degree, throughout the whole of New England." "He did more," it has been said, "than any other man ever did to extend medical and surgical knowledge in the northern states."

One trait of character which was of great service to him, and which deserves to be imitated, was his spirit of wise enterprise. He was not a schemer, not in any sense a visionary; but as he was never contented with the knowledge which he possessed, so he was ready to forward any scheme for the improvement of others. The active and fatiguing labors of his profession did not prevent him from pursuing those plans which promised a wide, although distant, good. While he was sustaining every department of the medical college at Hanover, he was engaged in an extensive medical and surgical practice, which led him over rough country, which he traversed, almost always on horseback, in all seasons and all weathers.

His mind was naturally strong and sagacious, and he became not merely the propagator of the opinions of others, but the originator of new methods of treating dangerous disorders, and of per-

forming difficult operations in surgery. He was assiduous in care of the sick, and extremely benevolent to the poor. To all his patients his attentions were delicate, tender, and unwearied. "Their faces brightened, and their spirits were roused at his approach, not more by the relief which they expected, than by the kindness with which it was afforded. He watched at their bedside by day and by night, administering to all their wants, and performing the offices of a kind friend, as well as of a skilful physician." That he died without property, is of itself a proof of the zeal with which he devoted himself, regardless of the cost, to enlarging the bounds of his favorite science. By his acquaintance with medical men, as well as by lectures to the various schools with which he was connected, he exerted a very considerable influence upon the literature of his profession; although, while living, he was not much known as an author. He will be long remembered among those who have trampled early discouragements under foot, and risen to eminence in spite of them, by the force of their own determination; who, with small means, created in part by their own ingenuity and energy, have made large attainments, and have accomplished great good.

JAMES FERGUSON.

James Ferguson was born in the year 1710, a few miles from the village of Keith, in Banffshire, Scotland. His parents, as he informs us, were in the humblest condition of life (his father being merely a day laborer), honest and religious. It was his father's practice to teach his children himself to read and write, as they successively reached what he deemed the proper age; but James was too impatient to wait till his regular turn came. While his father was teaching one of his elder brothers, James was secretly occupied in listening to what was going on; and, as soon as he was left alone, used to get hold of the book and labor diligently in endeavoring to master the lesson which he had thus gone over. Being ashamed, as he says, to let his father know in what manner he was engaged, he was accustomed to apply to an old woman, who lived in a neighboring cottage, to solve his difficulties. In this way he actually learned to read tolerably well before his father had any suspicion that he knew his letters. His father, at last, very much to his surprise, detected him, one day, reading by himself, and thus discovered his secret. When he was about seven or eight years of age, a simple incident occurred, which seems to have given his mind its first bias to what became afterwards its favorite kind of pursuit. The roof of the cottage having partly fallen in, his father, in order to raise it again, applied a beam to it, resting on a

prop in the manner of a lever, and was thus enabled, with comparative ease, to produce what seemed to his son quite a stupendous effect. This circumstance set our young philosopher thinking; and after a while it occurred to him that his father, in using the beam, had applied his strength to its extremity, and this, he immediately concluded, was an important circumstance in the matter. He proceeded to verify his notion by experiment; and having made several levers which he called bars, soon not only found that he was right in his conjecture, as to the importance of applying the moving force at the point most distant from the fulcrum, but discovered the rule or law of the machine; namely, that the effect of any form or weight made to bear upon it, is always exactly proportioned to the distance of the point on which it rests from the fulcrum. "I then," says he, "thought that it was a great pity, that, by means of this bar, a weight could be raised but a very little way. On this, I soon imagined that by pulling round a wheel, the weight might be raised to any height, by tying a rope to the weight, and winding a rope round the axle of the wheel; and that the power gained must be just as great as the wheel was broader than the axle was thick; and found it to be exactly so, by hanging one weight to a rope put round the wheel, and another to the rope that coiled round the axle." The child had thus, it will be observed, actually discovered two of the most important elementary truths in mechanics — the lever, and the wheel and axle; he afterwards hit upon others; and, all the while, he had not only possessed neither book nor teacher to assist him, but was without any other tools than

a simple turning lathe of his father's, and a little knife wherewith to fashion his blocks and wheels, and the other contrivances which he needed for his experiments. After having made his discoveries, however, he next, he tells us, proceeded to write an account of them; thinking his little work, which contained sketches of the different machines drawn with a pen, to be the first treatise ever composed of the sort. When, some time after, a gentleman showed him the whole in a printed book, although he found that he had been anticipated in his inventions, he was much pleased, as he was well entitled to be, on thus perceiving that his unaided genius had already carried him so far into what was acknowledged to be the region of true philosophy. Ferguson was employed in some of his early years as a keeper of sheep, in the employment of a small farmer in the neighborhood of his native place. He was sent to this occupation, he tells us, as being of a weak body; and while his flock was feeding around him, he used to busy himself in making models of mills, spinning-wheels, &c. during the day, and in studying the stars at night, like his predecessors of Chaldea. When a little older, he went into the service of another farmer, a respectable man called James Glashan, whose name well deserves to be remembered. After the labors of the day, young Ferguson used to go at night to the fields, with a blanket about him, and a lighted candle, and there, laying himself down on his back, pursued for long hours his observations on the heavenly bodies. "I used to stretch," says he, "a thread with small beads on it, at arms-length, between my eye and the stars; sliding the beads

upon it, till they hid such and such stars from my eye, in order to take their apparent distances from one another; and then laying a thread down on the paper, I marked the stars thereon by the beads. My master at first laughed at me; but when I explained my meaning to him, he encouraged me to go on; and, that I might make fair copies in the day time of what I had done in the night, he often worked for me himself. I shall always have a respect for the memory of that man."

Having been employed by his master to carry a message to Mr. Gilchrist, the minister of Keith, he took with him the drawings he had been making, and showed them to that gentleman. Mr. Gilchrist upon this put a map into his hands, and having supplied him with compasses, ruler, pens, ink, and paper, desired him to take it home with him, and bring back a copy of it. "For this pleasant employment," says he, "my master gave me more time than I could reasonably expect; and often took the threshing-flail out of my hands, and worked himself, while I sat by him in the barn, busy with my compasses, ruler, and pen." Having finished his map, Ferguson carried it to Mr. Gilchrist's; and there he met Mr. Grant, of Achoynamey, who offered to take him into his house, and make his butler give him lessons. "I told Squire Grant," says he, "that I should rejoice to be at his house, as soon as the time was expired for which I was engaged with my present master. He very politely offered to put one in my place, but this I declined." When the period in question arrived, accordingly he went to Mr. Grant's, being now in his twentieth year. Here he found both a good friend and a very extraor-

dinary man, in Cantley the butler, who had first fixed his attention, by a sun-dial, which he happened to be engaged in painting, on the village school-house, as Ferguson was passing along the road, on his second visit to Mr. Gilchrist. Dialing, however, was only one of the many accomplishments of this learned butler; who, Ferguson assures us, was profoundly conversant both with arithmetic and mathematics, played on every known musical instrument except the harp, understood Latin, French, and Greek, and could also prescribe for diseases. These multifarious attainments he owed entirely to himself and to the God of nature. From this person, Ferguson received instructions in decimal fractions and algebra, having already made himself master of vulgar arithmetic, by the assistance of books. Just as he was about, however, to begin geometry, Cantley left his place for another in the establishment of the Earl of Fife, and his pupil thereupon determined to return home to his father. Cantley, on parting with him, had made him a present of a copy of Gordon's Geographical Grammar. The book contains a description of an artificial globe, which is not, however, illustrated by any figure. Nevertheless, "from this description," says Ferguson, "I made a globe in three weeks at my father's house, having turned the ball thereof out of a piece of wood; which ball I covered with paper, and delineated a map of the world upon it; made the meridian ring and horizon of wood, covered them with paper, and graduated them; and was happy to find that by my globe, which was the first I ever saw, I could solve the problems."

For some time after this, he was very unfortu-

nate. Finding that it would not do to remain idle at home, he engaged in the service of a miller in the neighborhood, who, feeling, probably, that he could trust to the honesty and capacity of his servant, soon began to spend all his own time in the ale-house, and to leave poor Ferguson at home, not only with every thing to do, but with very frequently nothing to eat. A little oat-meal, mixed with cold water, was often, he tells us, all he was allowed. Yet in this situation he remained a year, and then returned to his father's house, very much weaker for his want of food. His next master was a Dr. Young, who, having induced him to enter his service by a promise to instruct him in medicine, not only broke his engagement as to this point, but used him in other respects so tyrannically, that, although engaged for half a year, he found he could not remain beyond the first quarter; at the expiration of which, accordingly, he came away without receiving any wages, having "wrought for the last fortnight," says he, "as much as possible, with one hand, and even when I could not lift the other from my side." This was in consequence of a severe hurt he had received, to which the doctor was too busy to attend, and by which he was confined to his bed two months after his return home. Reduced as he was, however, by exhaustion and actual pain, he could not be idle. "In order," says he, "to amuse myself in this low state, I made a wooden clock, the frame of which was also of wood, and it kept time pretty well. The bell on which the hammer struck the hours, was the neck of a broken bottle." A short time after this, when he had recovered his health, he gave a still more

extraordinary proof of his ingenuity, and the fertility of his resources for mechanical invention, by actually constructing a time-piece, or watch, moved by a spring. "Having then," he remarks, "no idea how any time-piece could go but by a weight and a line, I wondered how a watch could go in all positions; and was sorry that I never thought of asking Mr. Cantley, who could have very easily informed me. But happening one day to see a gentleman ride by my father's house (which was close by a public road), I asked him what o'clock it then was? He looked at his watch and told me. As he did that with so much good nature, I begged of him to show me the inside of the watch; and though he was an entire stranger, he immediately opened the watch, and put it into my hands. I saw the spring box, with part of the chain round it; and asked him what it was that made the box turn round? He told me that it was turned round by a steel spring within it. Having then never seen any other spring than that of my father's gun-locks, I asked how a spring within a box could turn the box so often round as to wind all the chain upon it? He answered that the spring was long and thin; that one end of it was fastened to the axis of the box; and the other end to the inside of the box; that the axis was fixed, and the box was loose upon it. I told him that I did not yet thoroughly understand the matter. "Well, my lad, says he, "take a long, thin piece of whalebone; hold one end of it fast between your finger and thumb, and wind it round your finger; it will then endeavor to unwind itself; and if you fix the other end of it to the inside of a small hoop, and leave it to it-

self, it will turn the hoop round and round, and wing up a thread tied to the outside of the hoop." I thanked the gentleman, and told him that I understood the thing very well. I then tried to make a watch with wooden wheels, and made the spring of whalebone; but found that I could not make the wheel go when the balance was put on; because the teeth of the wheels were rather too weak to bear the force of a spring sufficient to move the balance, although the wheels would run fast enough when the balance was taken off. I enclosed the whole in a wooden case, very little larger than a breakfast tea-cup; but a clumsy neighbor one day looking at my watch, happened to let it fall, and, turning hastily about to pick it up, set his foot upon it, and crushed it all to pieces; which so provoked my father, that he was almost ready to beat the man, and discouraged me so much, that I never attempted to make another such machine again, especially as I was thoroughly convinced I could never make one that would be of any real use."

"What a vivid picture is this," says his biographer, in the Library of Entertaining Knowledge, "of an ingenious mind thirsting for knowledge! and who is there, too, that does not envy the pleasure that must have been felt by the courteous and intelligent stranger by whom the young mechanician was carried over his first great difficulty, if he had ever chanced to learn how greatly his unknown questioner had profited from their brief interview? That stranger might probably have read the above narrative, as given to the world by Ferguson, after the talents, which this little incident probably contributed to develope,

had raised him from his obscurity to a distinguished place among the philosophers of his age; and if he did not know this, he must have felt that encouragement in well doing which a benevolent man may always gather, either from the positive effects of acts of kindness upon others, or their influence upon his own heart. Civility, charity, generosity, may sometimes meet an ill return, but *one* person must be benefitted by their exercise; the kind heart has its own abundant reward, whatever be the gratitude or ingratitude of others. The case of Ferguson shows that the seed does not always fall on an unkindly soil."

Ferguson lived for many years in Edinburgh, engaged in drawing pictures, and in various astronomical pursuits. Among other things, he discovered by himself the cause of eclipses, and drew up a scheme for showing the motions and places of the sun and moon in the ecliptic on each day of the year, perpetually. He also made an orrery, without ever having seen the internal construction of any one. In the course of his life he made eight orreries, the last six of which were all unlike each other. Having written a proof of a new astronomical truth which had occurred to him, — namely, that the moon must move always in a path concave to the sun, — he showed his proposition and its demonstration to Mr. Folkes, the president of the Royal Society of London, who thereupon took him the same evening to the meeting of that learned body. This had the effect of bringing him immediately into notice. He soon after published his first work, "A Dissertation on the Phenomena of the Harvest Moon," with the description of a new orrery, having four

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wheels. It was followed by various other publications, most of which became very popular. In 1748, he began to give public lectures. Among his occasional auditors was George III., then a boy. In 1763, he was elected a Fellow of the Royal Society, the usual fees being remitted, as had been done in the cases of Newton and Thomas Simpson. He died in 1776, having acquired a distinguished reputation both at home and abroad.

JAMES WATT.

The present age is remarkable for the number and value of its mechanical inventions. There never was a time when the energies of nature were so entirely under the control of man. Agents which, a hundred years since, no one thought of employing, are now our mightiest, most docile, most constant servitors. The vapor, which our grandfathers watched, rushing from the tea-kettle, and thought of only as an indication of the boiling water within, we collect, and compel it to bear us over "iron-highways, in wains fire-winged," to transport us thousands of miles, over the waste of waters, to turn for us massive machinery, to perform the labor of ten thousand hands. The electricity which we once gazed upon with wonder and awe, as it flashed from cloud to cloud, or played with for our amusement in the laboratory, has become our swiftest, most obedient messenger.

Among the most distinguished of those who, by their science and skill, have taught us how to tame and to use the unwearied forces of the elements, stands the name of James Watt. He was born in Greenock, Scotland, January 19th, 1736. His father, an ingenious and enterprising man, was a merchant and magistrate of the town, and "a zealous promoter of improvements." He died in 1782, when nearly eighty-four years old. In the public schools of his native town, young Watt received the rudiments of his education; but the delicacy of his constitution was such, that

he attended the classes with difficulty. He was, however, very studious at home, and began early to exhibit a partiality for mechanical contrivances. When he was sixteen years old, he was apprenticed to an optician, as he was called, — a person who was "by turns a cutler and a whitesmith, a repairer of fiddles, and a tuner of spinets." With him he remained two years. In his eighteenth year he went to London, to place himself under the tuition of a mathematical instrument maker. His health, however, becoming impaired, he was obliged to leave the metropolis in a little more than a twelvemonth; but he continued, after his return home, to perfect himself in the art, in which he manifested great proficiency. He soon visited Glasgow, with the desire of establishing himself there, but met with opposition from some who considered him an intruder upon their privileges. Under these circumstances, the professors of the college, appreciating his fine tact and ingenuity, afforded him protection, and gave him an apartment for carrying on his business within their precincts, with the title of "*Mathematical Instrument Maker to the University.*"

There were at this time connected with the University, Adam Smith, Robert Simpson, Dr. Black, and Dr. Dick, whose approbation alone would be sufficient to show that the young artisan had already given decided proofs of skill. He was at this time twenty-one years of age, and remained in connection with the college six years, until 1763, when he removed into the town.

About the year 1761 or 1762, he began his inquiries respecting the steam-engine; and the idea suggested itself of the possibility of applying

steam with greater advantage than formerly to the moving of machinery. A small model was constructed, in which an upright piston was raised by admitting steam below it, and forced down again by the pressure of the atmosphere. This contrivance he soon abandoned, and the pressure of business prevented him from immediately resuming his investigation.

As much of Mr. Watt's fame depends upon his labors in connection with the steam-engine, we shall in this place give a connected and somewhat particular account of his improvements, rather than break up the narrative by mentioning other events of his life, which for a time interrupted his experiments. The utility of steam, as a moving power, depends upon its immense expansive force, in connection with the property of immense and sudden contraction by condensation. A cubic *inch* of water, at the ordinary pressure of the atmosphere, will make a cubic *foot* of steam. Water above a certain temperature (at the ordinary atmospheric pressure, 212 degrees, Fahrenheit) will become steam; and, on the contrary, steam below a certain temperature will become water. If, then, a cubic inch of water be heated above 212 degrees, a portion of it will at once expand to about 1,800 times its former dimensions. But steam, by being confined, may be made to exert this great expansive force to the movement of machinery. On the other hand, 1,800 cubic inches of steam, by being suddenly cooled, contracts so as to fill but one cubic inch in the form of water. Hence, if a tight vessel, say a cylinder, filled with steam, were suddenly cooled, a partial vacuum would be immediately formed by conden-

sation ; and, if one end of the cylinder were moveable, the pressure of the atmosphere would force it in. The introduction of steam again, would force the moveable head of the cylinder back, and thus a motion backwards and forwards could be obtained. This was, in fact, nearly the earliest form of the steam-engine. To the moveable head of the cylinder a rod was attached, and this was connected with a lever which moved certain pieces of machinery.

The properties of steam, on which its utility as a moving agent depends, were known to a certain extent for centuries before any one thought of applying them. This, indeed, is the history of almost every useful art. A discovery which, after it is known, seems so simple that every body wonders *he* did not see it, remains hid for thousands of years, but at last proves great enough to immortalize the fortunate inventor. How stupid men were, to toil in copying books with the pen for centuries, when, by the aid of blocks of wood or bits of lead, they could have so immensely diminished the labor ! In the seventeenth century, attention was frequently directed by ingenious artists to the uses of steam in performing simple but laborious occupations, such as pumping water. At the time when Mr. Watt commenced his labors on the subject, a machine was in use, invented by Thomas Newcomen, an ingenious mechanic. — The object of the steam, according to his contrivance, was simply to create a vacuum, into which the atmospheric pressure could force a piston (to be raised again by a counterpoise), and thus apply a moving power, of about fourteen pounds to the square inch. In practice, it was found that the

power applied was much less than this, on account of the vacuum being imperfectly formed. The steam in the cylinder was at first condensed by cooling the cylinder itself with cold water. It was afterwards accidentally discovered, that the same could be better accomplished, by injecting a stream of cold water *into* the cylinder.

It was still a very imperfect machine. Great care and watchfulness were necessary on the part of the attendant in opening the different valves, which he was obliged to do fourteen times *a minute*, or risk the destruction of the apparatus. When he opened the steam valve, he was obliged to watch the ascent of the piston, and at the moment of its reaching the proper height, close the valve and instantly open the injection pipe. When this cooled the steam sufficiently, and the piston began to descend, the steam must be let in again at a particular moment; or the heavy piston, forced down by the atmosphere with too great rapidity, would shake the apparatus to pieces. One of the first contrivances to dispense with this constant watchfulness of the attendant, resulted from the ingenuity of an idle boy, Humphrey Potter. He added to the machine (what he called a *scoggan*) "a catch, that the beam or lever always opened. To *scog* is a verb, found in certain vocabularies in the north of England, implying to skulk; and this young gentleman, impelled by a love of idleness or play common to boyhood, and having his wits about him, after due meditation, devised this contrivance, by which so important an improvement was effected, and himself allowed the means of 'scogging' for his own diversion." The *importance* of the discovery

may be seen in the fact, that, while before, the piston would make but six or eight strokes a minute, afterwards it would make fifteen or sixteen. Without dwelling longer upon the history of the steam-engine, we will return to the life of Watt.

In the winter of 1763–4, the Professor of Natural Philosophy at Glasgow put into Mr. Watt's hands a model of an engine upon Newcomen's plan, to be repaired. While at work upon this model, he perceived the immense loss of steam from condensation, caused by the cold surface of the cylinder. He determined, by experiment, that this loss was "not less than three or four times as much as would fill the cylinder and work the engine." In the operation of the engine there was also a great waste of heat. The cylinder was at one moment heated so that he could not bear his finger upon it, and must then be cooled so as to condense the steam; and this alternate heating and cooling took place at every stroke of the piston. In the course of these experiments, he became acquainted with the theory of latent heat, which had been previously expounded by Dr. Black, but of which he had not heard.

The materials with which he performed his experiments were of the cheapest kinds. Apothecaries' vials, a glass tube or two, and a tea-kettle, enabled him to arrive at some very important conclusions. By attaching a glass tube to the nose of a tea-kettle, he conducted the steam into a glass of water, and, by the time the water came to the boiling temperature, he found its volume had increased nearly a sixth part; i. e., "that one measure of water, in the form of steam, can raise about six measures of water to its own heat." In the

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words of Dr. Ure, that "a cubic inch of water would form a cubic foot of ordinary steam, or 1,728 inches; and that the condensation of that quantity of steam would heat six cubic inches of water from the atmospheric temperature to the boiling point. Hence, he saw that six times the difference of temperature, or fully 800 degrees of heat, has been employed in giving elasticity to steam, and which must all be subtracted before a complete vacuum could be obtained under the piston of a steam-engine."

To remedy this evil, he first substituted a wooden cylinder for a metal one; so that the heat might be transmitted more slowly. This, however, was liable to many other objections; and he then cased his cylinders in wood, and filled the space between them with ashes. By this means, he reduced the waste one half. Still he felt it to be of great consequence to condense the steam without cooling the cylinder; and early in the year 1765, it occurred to him, "*that, if a communication were opened between a cylinder containing steam, and another vessel which was exhausted of air and other fluids, the steam, as an expansible fluid, would immediately rush into the empty vessel, and continue to do so until it had established an equilibrium; and that, if the vessel were kept very cool by an injection or otherwise, more steam would continue to enter until the whole were condensed.*" This was an immense advance; since, by condensing the steam in a separate vessel, the main cylinder could be preserved at the same temperature. There was soon perceived, however, another hindrance to this. Thus far, the cylinder was open at the top, and when the piston

was raised by steam, it was pressed down again by the weight of the atmosphere. Hence, as the cold air was admitted on the descent of the piston, the sides of the cylinder were necessarily cooled. It then occurred to Mr. Watt, to make the cylinder air-tight, simply leaving a hole for the passage of the piston rod, around which oakum could be packed so tight as to prevent the escape of steam, and then to dispense with the air entirely in the working of the machine, and to press the piston down as w ll as up, by means of steam. This proved to be another great improvement, by introducing a force which could be precisely controlled, doing away with the old system of counterpoises, and giving the engine a *double-acting* power. Mr. Watt soon found by experiment, that he had not overcome all the impediments in the way of perfect success. The vessel in which the condensation was effected, — the condenser, — became soon surcharged with water, with uncondensed steam, and partly with atmospheric air contained in the water, and set free from it by great heat. To remedy this, his genius contrived to apply a pump (since called the air-pump), so that, at every stroke of the engine, the condenser might be freed from whatever it contained. This pump was connected with the engine itself, and worked by it.

We have not the space to describe particularly the minor improvements which were afterwards introduced by Mr. Watt (among which was the application of the *governor*, or regulator), but the *expansion* engine, as he called it, is an improvement so great that it cannot be overlooked. According to the old plan, the steam was admitted

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continuously, at one end of the cylinder, until the piston was entirely raised, and then again at the other end, until it was entirely depressed. Upon this plan, it was found necessary to proportion the work to be performed very exactly to the power which was generated; since, if the power greatly exceeded the weight to be raised, it would occasion so rapid a motion, that no machinery could withstand the jolts and shocks. Much damage was thus done, and much expense incurred. This was no slight drawback to the general utility of the machine. This difficulty, too, was effectually remedied. Steam in the boiler is greatly condensed. It occurred then to Mr. Watt, that, if the steam were shut off after the piston had been pressed down for a certain proportion of its total descent — say one half, one third, or one quarter — the expansive force of the steam already introduced would be sufficient to accomplish the rest of the descent. This was found to be the case; and by adjusting the rods of the machinery, the valve could be closed at any moment, and the acting force brought completely under the power of man. By this means, not only is the steam greatly economized, but is made to work as gently as the most docile animal, The jar in the machinery is taken away; and an engine, with the power of three hundred horses, may be at full work, and the tremor hardly be perceived.

Another important discovery resulted from these attempts of Mr. Watt to economize steam, and to save the machinery. We will state it in the words of a recent writer: — "He found that steam, admitted into the cylinder to one fourth of its depth, and exerting a pressure amounting to

6,333 pounds, when allowed to expand into the whole capacity of the cylinder, added a pressure of 8,781 pounds; and moreover, that had the cylinder been filled with steam of the same force. and exerting the accumulated pressure of (6,333×4) 25,332 pounds, the steam expended in that case would have been four times greater than when it was stopped at one fourth; and yet the accumulated pressure was not twice as great, being nearly five thirds. One fourth of the steam performs nearly three fifths of the work, and an equal quantity performs more than twice as much work when thus admitted during one fourth of the motion;" i. e., instead of 6,333 pounds. exerts an accumulated force of 15,114 pounds.' It is hardly necessary to say that these figures represent the pressure as found in a particular experiment. The *proportions*, it is presumed, will be found nearly true under all circumstances.

We have thus mentioned some of the principal improvements effected in the steam engine, by the ingenuity of Mr. Watt. They are so great, and in fact essential, as to throw all other improvements into the shade. They. indeed, created the modern steam-engine. Mr. Watt, perhaps, did not dream of the extensive applications to which this power could be put. It may be that we ourselves have but half developed its capabilities. Steam was used for many years on land, before it was applied with any success to the propelling of boats. It was employed on boats long before brought into service in moving land carriages. Only a few years ago, a learned man demonstrated, as he thought, the absolute impracticability of propelling a ship, by means of it,

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across the Atlantic. But now you hear the panting of the mighty monster on every sea and ocean. It rounds the southern capes; circumnavigates the world. Manufactures, the most delicate and the most ponderous, are indebted to its obedient ministrations; it performs processes the most complicated as well as the most simple; it weaves the most delicate tissue; it breaks asunder the strongest bars of iron; it stretches out its iron fingers, seizes the sheet of paper, and, in a moment, delivers it back to you a printed book; it raises the huge block of stone to the top of the monument or the fortification; it turns out the irregular shaped last and gun-stock. He is a bold prophet who shall foretell a limit to the application of an agent so mighty and so docile.

These improvements were not made by Mr. Watt without trouble and expense. His reputation was strongly attacked; his originality denied; his right to various patents vehemently contested. He was many times disappointed in the working of his own contrivances, and was obliged to throw away many pieces of machinery, from which he expected much. And, after all, he left abundant opportunities for the exercise of ingenuity by future engineers. In fact his discoveries furnished materials for the many improvements which have been effected since his time. As a proof of the slight use which had been made of steam-engines before his time, and of the prejudices and sluggishness against which his invention had to contend, it is stated that the sum of very nearly £50,000 — almost $250,000 — was expended by Watt and Bolton (his partner) in the manufacture of the improved engines, before they realized any return.

It must not be supposed that these improvements of Mr. Watt were made continuously, as they have been described. He was often interrupted by want of means to exhibit his machine on an adequate scale, and also by engaging, from time to time, in other occupations. He did not confine himself to improvements of the steam-engine. Although self-taught, he acquired considerable reputation as a civil engineer. In 1767, he was employed to make a survey for a canal between the rivers Forth and Clyde. The bill necessary for its execution was lost in parliament. A canal from the Monkland collieries to Glasgow was then entrusted to his superintendence, after he had already made the necessary surveys and prepared the estimates. The Trustees for Fisheries and Manufactures in Scotland soon employed him to survey a projected canal from Perth to Forfar. This again was succeeded by a survey of the Crinan Canal, to connect the Frith of Clyde and the Western Ocean. This canal was afterwards executed by his friend, Mr. Rennie, who became distinguished as one of the best engineers in England. Business of this kind now crowded upon him. He was called upon to furnish plans for deepening the river Clyde; for rendering the rivers Forth and Devon navigable; for improving the harbors of Ayr, Port-Glasgow, and Greenock; and for building several important bridges. The last and greatest work of this sort, upon which he was engaged, was surveying the line of a projected canal between Fort William and Inverness. This was afterwards executed on a larger scale than was at first proposed, under the name of the Caledonian Canal. It was during

the execution of some of these works, that he invented an ingenious micrometer, for measuring distances (such as the breadth of arms of the sea) which could not be measured by the chain. It was found to be of great value in ascertaining the distance between hills, and, on uneven ground, proved to be more accurate than the chain.

In the course of his pursuits as a surveyor, Mr. Watt became acquainted with Dr. Roebuck, an English physician, who was at this time acquiring a fortune by the manufacture of sulphuric acid. Dr. Roebuck had a short time before completed his establishment of the Carron Iron-works,* and Mr. Watt formed a partnership with him, for the sake of the pecuniary aid he could afford in constructing the improved engines on a large scale; retaining, as his own share of the profits, one third of the proceeds from the invention. In his expectations, he was, however, disappointed; partly from entering so largely into engagements as an engineer, some of which we have already referred to, and partly from the pecuniary difficulties in which his partner became involved. He had, indeed, nearly given up the hope of accomplishing his schemes, when Mr. Matthew Bolton, an engineer of some eminence and considerable wealth, living near Birmingham, purchased Dr. Roebuck's share of the patent. The partnership between Watt and Bolton was formed in 1773, and Mr. Watt removed to England.

Although common fame cherishes the name of Watt mainly as the perfecter of the steam-engine,

* The kind of ordnance called *a Carronade* received its name from having been first manufactured at Carron, a village twenty-six miles north-east from Edinburgh.

yet he did not confine his inventions to this alone. Feeling the necessity of preserving accurate copies of his drawings and of letters containing calculations, he invented a copying apparatus. In its simplest form it is merely a press, by means of which, a thin sheet of unsized paper, rendered slightly wet, is strongly pressed upon the letter to be copied, which has been written in a strong character, with ink which is soluble in water. The impression is then read on the opposite side from that on which it is taken.

In 1781, he contrived a steam-drying apparatus for a relation living near Glasgow. In 1784–5, he put up an apparatus for heating his study by means of steam, a method which is now frequently used in manufactories, in conservatories and hot-houses, and, sometimes, as we have known, in steamboats. While most busily occupied with the steam-engine, he found time to engage in chemical studies. The constituent elements of water attracted his attention, on account of some experiments of Dr. Priestley; and, in April, 1784, he communicated to the Royal Society, a paper, entitled, "*Thoughts on the constituent parts of water and of dephlogisticated air, with an account of some experiments upon that subject.*"

The winter of 1786–7, Mr. Watt spent at Paris; having been invited to France by the government for the purpose of suggesting improvements in the manner of raising water at Marly, that being the place from which the splendid water-works at Versailles draw their supply. During this temporary residence, he became acquainted with Mr. Berthollet, one of the most distinguished chemists of his time. The art of bleaching by means of

oxymuriatic acid had just been discovered by him. He communicated the invention to Mr. Watt, who, seeing at once the wide use that might be made of it, advised him to take out an English patent. This, Mr. Berthollet declined doing, and left Mr. Watt to make such use of the invention as he pleased. Accordingly he introduced it into the bleaching field of his father-in-law, Mr. MacGregor, and gave directions for the construction of the necessary vessels and machinery. At his first attempt, he bleached five hundred pieces of cloth.

From 1792 to 1799, the firm of Bolton & Watt was much occupied in defending their patent rights against numerous invaders. The dues which they claimed were one third of the savings of fuel, compared with the best engines previously in use. Several verdicts were given in their favor, up to 1799, when a unanimous decision of all the judges of the Court of King's Bench established the validity of their claims to novel and useful inventions.

In 1800, Mr. Watt withdrew from business; giving up his shares to his two sons, of whom the youngest, Mr. Gregory Watt, died soon after.

Although thus removed from immediate connection with business, his interest in his former pursuits did not desert him. He maintained a warm friendship with his old associate, Mr. Bolton, to the close of his life. One of his later inventions was a machine for copying all kinds of statuary. His taste for sculpture had been cultivated by a series of experiments in making a composition having the transparency and nearly the hardness of marble, from which he made many casts.

In 1809, from grateful remembrances of his early residence in Glasgow, he lent his assistance to the proprietors of the water-works, in their attempt to supply the city with pure water. The city is built upon the right bank of the Clyde. It was proposed to sink a well on the *left* bank of the river, where the sand affords a natural filter for the water. The problem was, to convey the water across the river. Mr. Watt suggested a flexible pipe, which was found to succeed completely. Another pipe was afterwards laid, in order to increase the supply. The idea of the flexible joint was suggested, as he himself said, by observing the flexibility of the lobster's tail.

Although we have confined our sketch of Mr. Watt mainly to his mechanical skill, it would not be just to close our account of him here. There was hardly a physical science or an art with which he was not pretty intimately acquainted. His philosophical judgment kept pace with his ingenuity. He studied modern languages, and was acquainted with literature. His memory was extremely tenacious; and whatever he once learned, he always had at his command. We should also remember that his health was never firm. He accomplished his great labors in spite of a constitutional debility, increased by anxiety and perplexity, during the long process of his inventions, and the subsequent care of defending them. He was frequently attacked by sick headaches of great severity, which seem to have arisen from a defect of the digestive organs. Nothing preserved his life but constant temperance and watchfulness of his peculiar difficulties. Notwithstanding his infirmities, he attained the great age

of 83, and died after a short illness, in the midst of his family, at Heathfield, August 25, 1819.

He did not live without the testimony of learned bodies of men to his great attainments. In 1784, he was elected a Fellow of the Royal Society of Edinburgh; in 1785, a member of the Royal Society of London; in 1787, a corresponding member of the Batavian Society; in 1806, he received from Glasgow the degree of Doctor of Laws; and in 1808, he was elected, first, a corresponding member, and afterwards, an associate, of the Institute of France.

His remains were deposited in the chancel of the parochial church of Handsworth, near those of his former associate, Mr. Bolton. An excellent bust of him was made by Mr. Chantry, before his death; and a statue was subsequently completed by the same distinguished artist, intended to be placed upon his tomb.

We shall close this sketch, by a few extracts from an eloquent eulogy, written soon after his death, by Lord Jeffrey, and published in the journals of the time: —

"It is with pain that we find ourselves called upon, so soon after the loss of Mr. Playfair, to record the decease of another of our illustrious countrymen, and one to whom mankind has been still more largely indebted — Mr. James Watt, the great improver of the steam-engine. This name, fortunately, needs no commemoration of ours; for he that bore it survived to see it crowned with undisputed and unenvied honors, and many generations will probably pass away before it shall have 'gathered all its fame.' We have said that Mr. Watt was the great *improver* of the steam-

engine; but, in truth, as to all that is admirable in its structure, or vast in its utility, he should rather be described as its *inventor*. It was by his inventions, that its action was so regulated as to make it capable of being applied to the finest and most delicate manufactures, and its power so increased as to set weight and solidity at defiance. By his admirable contrivances, it has become a thing stupendous alike for its force and its flexibility, — for the prodigious power which it can exert, and the ease, and precision, and ductility, with which it can be varied, distributed, and applied. The trunk of an elephant that can pick up a pin or rend an oak, is as nothing to it. It can engrave a seal, and crush masses of obdurate metal like wax, before it, — draw out, without breaking, a thread as fine as gossamer, and lift a ship of war like a bauble in the air. It can embroider muslin, and forge anchors, — cut steel into ribands, and impel loaded vessels against the fury of the winds and waves.

"It would be difficult to estimate the value of the benefits which these inventions have conferred upon the country. There is no branch of industry that has not been indebted to them; and in all the most material, they have not only widened most magnificently the field of its exertions, but multiplied a thousand-fold the amount of its productions. * * * It has increased indefinitely the mass of human comforts and enjoyments, and rendered cheap and accessible all over the world, the materials of wealth and prosperity. It has armed the feeble hand of man, in short, with a power to which no limit can be assigned; completed the dominion of mind over the most refrac-

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tory qualities of matter ; and laid a sure foundation for all those future miracles of mechanical power which are to aid and reward the labors of after generations. It is to the genius of one man, too, that all this is mainly owing ; and certainly, no man ever before bestowed such a gift on his kind. The blessing is not only universal, but unbounded ; and the fabled inventors of the plough and the loom, who were deified by the erring gratitude of their rude contemporaries, conferred less important benefits on mankind, than the inventor of our present steam-engine. * * * *

" Independently of his great attainments in mechanics, Mr. Watt was an extraordinary, and, in many respects, a wonderful man. Perhaps no individual in his age possessed so much, and such varied and exact information, — had read so much, or remembered what he had read so accurately and well. He had infinite quickness of apprehension, a prodigious memory, and a certain rectifying and methodising power of understanding, which extracted something precious out of all that was presented to it. His stores of miscellaneous knowledge were immense, — and yet less astonishing than the command he had at all times over them. * * * That he should have been minutely and extensively skilled in chemistry and the arts, and in most branches of physical science, might perhaps have been conjectured ; but it could not have been inferred from his usual occupations, and probably is not generally known, that he was curiously learned in many branches of antiquity, metaphysics, medicine, and etymology, and perfectly at home in all the details of architecture, music, and law. He was well ac-

quainted, too, with most of the modern languages, and familiar with their most recent literature.

"His astonishing memory was aided, no doubt, in great measure, by a still higher and rarer faculty — by his power of digesting and arranging in its proper place all the information he received, and of casting aside and rejecting, as it were instinctively, whatever was worthless or immaterial. * * * It is needless to say, that, with these vast resources, his conversation was at all times rich and instructive in no ordinary degree; but it was, if possible, still more pleasing than wise, and had all the charms of familiarity, with all the substantial treasures of knowledge. No man could be more social in his spirit, less assuming or fastidious in his manners, or more kind and indulgent towards all who approached him. * * * His talk, too, though overflowing with information, had no resemblance to lecturing or solemn discoursing; but, on the contrary, was full of colloquial spirit and pleasantry. He had a certain quiet and grave humor, which ran through most of his conversation; and a vein of temperate jocularity, which gave infinite zest and effect to the condensed and inexhaustible information, which formed its main staple and characteristic. * * * He had in his character the utmost abhorrence for all sorts of forwardness, parade, and pretension; and, indeed, never failed to put all such impostors out of countenance, by the manly plainness and honest intrepidity of his language and deportment.

"In his temper and disposition he was not only kind and affectionate, but generous, and considerate of the feelings of all around him; and gave

the most liberal assistance and encouragement to all young persons who showed any indications of talent, or applied to him for patronage or advice. * * * His friends, in this part of the country, never saw him more full of intellectual vigor and colloquial animation, — never more delightful or more instructive, than in his last visit to Scotland, in autumn, 1817. Indeed, it was after that time that he applied himself, with all the ardor of early life, to the invention of a machine for mechanically copying all sorts of sculpture and statuary, and distributed among his friends some of its earliest performances, as the production of a young artist, just entering on his 83d year.

"This happy and useful life came at last to a gentle close. He had suffered some inconvenience through the summer, but was not seriously indisposed till within a few weeks from his death. He then became perfectly aware of the event which was approaching; and, with his usual tranquillity and benevolence of nature, seemed only anxious to point out to the friends around him, the many sources of consolation which were afforded by the circumstances in which it was about to take place. * * * He was twice married, but has left no issue but one son, long associated with him in his business and studies, and two grand-children by a daughter who predeceased him. * * * All men of learning and science were his cordial friends; and such was the influence of his mild character and perfect fairness and liberality, even upon the pretenders to these accomplishments, that he lived to disarm even envy itself, and died, we verily believe, without a single enemy."

ELI WHITNEY.

Eli Whitney was born in Westborough, Mass., December 8, 1765. His father was a respectable farmer, industrious, frugal, and independent. The mechanical genius of the boy displayed itself at a very early age. His sister gives the following account of it: — "Our father had a workshop, and sometimes made wheels of different kinds, and chairs. He had a variety of tools, and a lathe for turning chair posts. This gave my brother an opportunity of learning the use of tools when very young. He lost no time; but, as soon as he could handle tools, he was always making something in the shop, and seemed not to like working on the farm. On a time, after the death of our mother, when our father had been absent from home two or three days, on his return he inquired of the housekeeper, what the boys had been doing. She told him what B. and J. had been about. 'But what has Eli been doing?' said he. She replied he had been making a fiddle. 'Ah!' added he despondingly, 'I fear Eli will have to take his portion in fiddles.' He was at this time about twelve years old. This fiddle was finished throughout, like a common violin, and made tolerably good music. It was examined by many persons, and all pronounced it to be a remarkable piece of work for such a boy to perform. From this time he was employed to repair violins, and had many nice jobs, which were always executed to the entire satisfaction, and often to the

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astonishment, of his customers. His father's watch being the greatest piece of mechanism that had yet presented itself to his observation, he was extremely desirous of examining its interior construction, but was not permitted to do so. One Sunday morning, observing that his father was going to meeting, and would leave at home the wonderful little machine, he immediately feigned illness as an apology for not going to church. As soon as the family were out of sight, he flew to the room where the watch hung; and, taking it down, he was so delighted with its motions, that he took it all in pieces before he thought of the consequences of his rash deed; for his father was a stern parent, and punishment would have been the reward of his idle curiosity, had the mischief been detected. He, however, put the work all so neatly together, that his father never discovered his audacity until he himself told him, many years afterwards."

At an early age, Whitney lost his mother; his father married again, when he was about thirteen. Among the new furniture brought into the house, in consequence of this arrangement, was a handsome set of table knives. On seeing them, the boy remarked that "he could make as good ones if he had tools, and he could make the necessary tools if he had a few common ones to make them with." This remark was not very graciously received; but the truth of it was soon proved. One of the knives, before long, was broken; and the boy made another just like it, excepting the stamp on the blade which he had no tools to impress.

When he was fifteen or sixteen, he began to turn his mechanical ingenuity to some account.

The revolutionary war had not closed; and nails were in great demand, and bore a high price. Young Whitney determined to commence manufacturing them. Having obtained the consent of his father, he went to work, gained time, by diligence, to make his own tools, and for two winters labored with much success. His summers were spent upon the farm. Wishing to enlarge his little works, he set out on horseback without mentioning his plan to his father, and went in quest of a fellow-workman. He travelled from town to town, calling at every workshop on his way, and learning all that he possibly could of various mechanic arts; nor was it till he had gone forty miles from home that he found a laborer of sufficient skill. This excursion is an early illustration of that perseverance which was one of his distinguishing characteristics in future life.

With the close of the war, his occupation as nailmaker lost its profitableness, and he turned his attention to making the long pins with which ladies were at that time accustomed to fasten their bonnets. In this his ingenuity was such, that he soon nearly monopolized the business. Although thus enticed by success to devote himself immediately to lucrative manufactures, he felt an earnest desire to obtain a liberal education. This wish was opposed by his step-mother; nor did his father give his free consent, until the young man was twenty-three years old. By various methods, however, — teaching a village-school in the winter, and carefully laying up the avails of his manual labor, — he was able so to prepare himself as to enter the Freshman class at Yale College, in May, 1789. In advancing to this point, he had to en-

counter other obstacles besides the reluctance of his friends. An intelligent neighbor endeavored to dissuade his father from sending him, on the ground that it was a pity that such fine mechanical talents should be wasted. Whitney thought otherwise. He probably had some idea of the tendency of a liberal education to expand the faculties, and liberalize the whole man. He thought that extensive knowledge, and the severest mental discipline, would only give him a wider reach and a stronger grasp of mind, and enable him to apply more effectively the peculiar ingenuity with which he was endowed. We shall hereafter see how much he was indebted to his liberal education for the manner in which he was received and regarded by the highest order of intellect in the land, and for the elevated tone which he naturally assumed in his intercourse both with individuals, and with the governments of different states.

In the month of July, 1788, while preparing to enter college, he was seized with a fever, which threatened his life. Thus was he again retarded from the goal of his wishes. His purpose was not shaken, however; and after his recovery, he finished his preparatory course with Dr. Goodrich, of Durham, Connecticut, and, in due time found himself, as we have said, a member of Yale College.

His college bills were paid by his father; but the money furnished was considered by the son as a loan, for which he gave his note. During his residence at college, he devoted his main attention to the subjects of which he was most fond. Mathematics and mechanics received more atten-

tion from him than the classics. His ingenuity sometimes served him a good purpose. On one occasion, some of the philosophical apparatus was out of order, and it was thought necessary to send it abroad to be repaired. Mr. Whitney proposed to remedy the defect, and did so to the satisfaction of the faculty.

After receiving his degree, in 1792, he prepared to go to Georgia, as private tutor in the family of a gentleman who had engaged his services. As a precautionary measure, at that time thought necessary to every traveller, he was inoculated for the small-pox. On his recovery, he sailed for Savannah, in company with Mrs. Greene, the widow of General Greene. This acquaintance proved in many respects a very fortunate one for the young adventurer. He had hardly landed in Georgia, a State to him ever ungrateful, when he found that another teacher had been employed in his place. Being thus left without friends and without resources, he was kindly received into the family of Mrs. Greene, and encouraged to pursue the study of law, to which his attention had been turned. He did not remain long without giving proof of his mechanical skill. His hostess was making a piece of embroidery in a tambour frame, of which she complained that it broke the threads of her work. Mr. Whitney immediately constructed another frame on a different plan, which remedied all the defects of the old.

He was on the eve, too, of another invention, which, from its immense utility, has rendered his name familiar over half the world. The uplands of Georgia, and of the Southern States generally, were known to be well adapted to the raising of a

kind of cotton, called the *green seed*, or *short staple*. The great drawback to the value of this product was the difficulty of separating the cotton fibre from the seed wrapped up in it. To clean one pound of the cotton was a day's work for a woman. This difficulty, and the necessity of some machine to remedy it, before the cultivation of cotton could become of value, was the subject of conversation, on a certain occasion, with a company of gentlemen, many of them officers in the Revolution, who were dining with Mrs. Greene. "Gentlemen," said this lady to them, at length, "apply to my young friend Mr. Whitney, — he can make any thing." Her purpose was to interest her friends in a deserving young man; but the result was entirely beyond her expectations. Whitney had never seen either the raw cotton, or the cotton seed; but his mind fastened upon the subject. It was out of season for cotton in the seed; but he went to Savannah, and, by searching in boats and warehouses, he found enough to show him the kind of material with which he was to experiment. This he carried home, and, having a room assigned him in the basement of the house, set himself to the invention of the *Cotton Gin*. In order to do this, he had to make his own tools, and to draw the wire of which the teeth of the instrument were at first made. By the close of the winter, the machine was nearly completed, and Mrs. Greene was anxious to show it to her friends. She therefore invited gentlemen from different parts of the State, to her house; and, having conducted them to a temporary building, exhibited to their wondering and delighted eyes the simple instrument which was

about to work such wonders upon the Southern plantations, to add so inestimably to the wealth of half our country, and to promote to so unexpected and marvellous an extent, the manufacture and consumption of cotton.

The *cotton gin* is not so complicated a machine as its great reputation would lead one to suppose. It consists, says one description, "of a receiver, having one side covered with strong parallel wires, about an eighth of an inch apart. Between these wires pass a number of circular saws, revolving on a common axis. The cotton is entangled in the teeth of the saws, and drawn out through the grating; while the seeds are prevented, by their size, from passing. The cotton, thus extricated, is swept from the saws by a revolving cylindrical brush, and the seeds fall out at the bottom of the receiver."

Let us for a moment look at the increase in the production of cotton in the United States. In 1784, *eight* bags of cotton on board an American vessel, at Liverpool, were seized by the custom-house officers, under the conviction that so much could not be the product of the United States. In 1791, the whole export of the United States was sixty-four bags, of three hundred pounds each.* The average growth of the three years previous to 1828 was *two hundred and seventy millions of pounds.* In the year 1839, according to the United States census, there were gathered SEVEN HUNDRED AND NINETY MILLIONS, FOUR HUNDRED SEVENTY-NINE THOUSAND, TWO HUNDRED AND SEVENTY-FIVE POUNDS. This pro-

*Encycl. Americana.—Article *Cotton.*

digious increase in the production has, of course, been proportionate to an equally prodigious increase in the use. Cotton fabrics have gradually taken the place of various other kinds. Hemp and linen have yielded to it. It is found capable of producing the coarse canvass for sails, and the delicate muslin for embroidery. It is made into beds of the cheapest and most agreeable kind; and, by the application of a chemical agent, is, in a few moments, converted into an explosive material, destined to work we know not what revolutions in the art of war, or the more profitable employment of civil engineering. Cities, devoted mainly to its manufacture, have sprung up in a night, and the capital employed in them almost surpasses the power of computation. The two men to whom the nations are most indebted for this marvellous change are, undoubtedly, Arkwright and Whitney, — the latter rendering it possible to produce the article with profit; the former enabling men to manufacture it with ease and rapidity. With the increased use, the price was proportionally diminished. What cost thirty cents in 1815, in 1830 cost less than ten, and still less in 1840. None in our country are now too poor to be comfortably and neatly clad in this healthful fabric.

In an English magazine, there appeared not a great while ago, an article, pleasantly illustrating the progress of a pound of cotton, in the course of the various processes exercised upon it. "There was sent to London, lately, from Paisley, a small piece of muslin, about one pound weight, the history of which is as follows: — The wool came from the East Indies to London; from London it went to Lancashire, where it was manufac-

tured into yarn; from Manchester it was sent to Paisley, where it was woven; it was sent to Ayrshire next, where it was tamboured; it was then conveyed to Dumbarton, where it was hand-sewed, and again returned to Paisley, whence it was sent to Glasgow and finished; and then sent, per coach, to London. It may be reckoned about three years that it took to bring this article to market, from the time when it was packed in India, till it arrived complete in the merchant's warehouse in London, whither it must have been conveyed 5,000 miles by sea, nearly 1,000 by land, and have contributed to reward the labor of nearly 150 persons, whose services were necessary in the carriage and manufacture of this small quantity of cotton, and by which the value has been advanced more than 2,000 per cent."

The effect of the invention of the cotton gin upon the Southern States was immediate and permanent. In the language of Judge Johnson, in pronouncing an opinion, in the U. S. Court, held in Georgia, December, 1807, "The whole interior of the Southern States was languishing, and its inhabitants emigrating for want of some object to engage their attention and employ their industry, when the invention of this machine at once opened views to them which set the whole country in active motion. From childhood to age, it has presented to us a lucrative employment. Individuals who were depressed with poverty, and sunk in idleness, have suddenly risen to wealth and respectability. Our debts have been paid off. Our capitals have increased, and our lands trebled themselves in value. We cannot express the weight of the obligation which the country

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owes to this invention. The extent of it cannot now be seen. Some faint presentiment may be formed, from the reflection that cotton is rapidly supplanting wool, flax, silk, and even furs in manufactures, and may one day profitably supply the use of specie in our East India trade. Our sister States also participate in the benefits of this invention; for, besides affording the raw material for their manufacturers, the bulkiness and quantity of the article afford a valuable employment for their shipping."

The inventor of a machine of such inestimable value, we might very naturally suppose, would receive an adequate reward for the benefit conferred. So far, however, was this from being the case, that his whole expectations from the State of Georgia were utterly disappointed and frustated, and the emoluments received from other States but little more than enabled him to meet the actual expenses incurred in the almost endless lawsuits by which alone he defended his undoubted rights.

Mr. Whitney was early so impressed with the perplexities to which he should be subjected, and so reluctant to turn aside from the profession of law, for which he was studying, that for some time he declined taking out a patent for his invention. At length, however, induced by the urgency of his friends, he formed a partnership with Mr. Miller, who had become the husband of Mrs. Greene, and immediately returned to Connecticut, for the sake of perfecting the machine; and, after obtaining a patent, of manufacturing, and sending a number of them to Georgia. In the mean time, the populace became anxious to pos-

sess an instrument which was so valuable, and, unable to obtain it immediately in any other manner, broke open by night the building which contained it, and carried it off. In consequence of this, the invention became known; and a number of machines, differing slightly from the original, were constructed before the patent could be issued.

The very first letter to Whitney from his partner, after he himself had returned to Connecticut, announced that rival machines were in the field. It would be impossible to detail at length the vexations and perplexities to which the patentees were subjected. Money, at that time, was scarce. In order to carry on their operations with success, it was necessary to go beyond their own means, and borrow at a ruinous rate of interest, at one time as high as five, six, and even seven per cent, *per month.* This was the least of their evils. The *roller gin* and the *saw gin* were set up in opposition to Whitney's. In March, 1795, having occasion to visit New York, he was attacked with the fever and ague, and laid up for three weeks. As soon as he could go out, he returned to New Haven; and the first tidings that reached him, as he stepped on shore, were, that his shop was burnt with all his machines, plans, and papers. This sad accident, which left him an absolute bankrupt, with a debt of four thousand dollars, did not dishearten him. His partner, too, in reply to the letter conveying the unpleasant intelligence, showed that he could bear misfortune with equanimity. "We have been pursuing," he says, "a valuable object by honorable means; and I trust that all our measures have been such as reason and virtue must justify. It has pleased

Providence to postpone the attainment of this object. In the midst of the reflections which your story has suggested, and with feelings keenly awake to the heavy, the extensive injury we have sustained, I feel a secret joy and satisfaction, that you possess a mind in this respect similar to my own — that you are not disheartened — that you do not relinquish the pursuit — and that you will persevere and endeavor, at all events, to attain the main object. I will devote all my time, all my thoughts, all my exertions, and all the money I can earn or borrow, to encompass and complete the business we have undertaken; and if fortune should, by any future disaster, deny us the boon we ask, we will at least deserve it. It shall never be said that we have lost an object which a little perseverance could have attained."

While laboring under this depression, news came that the English manufacturers condemned their machines, as injuring the cotton. This was a heavier blow than they had felt at all; since, if the fact alleged were true, the invention would be regarded with such distrust as virtually to make it of no value. Mr. Miller advised Whitney to go immediately to England, and counteract, by severe experiments, the unfortunate opinion. Nothing but a want of money prevented him. However, after a time, respectable manufacturers, both abroad and at home, expressed the opinion that the machine was an advantage to the staple. This restored its popularity, and would have made it valuable to the owners, if the encroachments on the patent right had not become so general.

The first trial which they obtained was in 1797. The case seemed so clear that the defendant told

an acquaintance that he would give two thousand dollars to be free from the verdict. Nevertheless the jury decided against them. An application for a new trial was refused. Strong efforts were made for a trial in a second suit; but, by the non-appearance of the Judge, no court was held. In 1799, they seemed to conclude that nothing was to be hoped for in Georgia, and arrangements were made in the course of a year or two, for obtaining assistance by direct application to the legislatures of the different States. The first attempt was made in South Carolina. Mr. Whitney, with letters from Mr. Jefferson, then President, and Mr. Madison, Secretary of State, went to Columbia, and presented a memorial, in which the use of the cotton gin was offered to the State, for one hundred thousand dollars. After some discussion, the legislature decided to offer fifty thousand, — twenty thousand to be paid in hand, and the remainder, in three annual payments of ten thousand dollars each. On application to North Carolina, a tax of two shillings and sixpence, to be continued for five years, was laid upon every *saw*, some of the gins having as many as forty saws. In Tennessee, a tax of thirty-seven cents and a half per annum was laid for four years. These favorable prospects were not without interruption. The year after the grant was made in South Carolina, it was annulled by a succeeding legislature, and a suit instituted for the recovery of what had been already paid. This was in 1803. The Governor of Georgia, in his message the same year, strongly advised the legislature *not* to grant any thing to Miller and Whitney. Tennesee, following the example of South Carolina, sus-

pended the payment of the tax laid on the preceeding year. A similar attempt was made in the legislature of North Carolina, but it entirely failed; their regard to the sacredness of the contract, and the usefulness of the invention, leading them, instead, to reaffirm the obligation they had assumed. In South Carolina, also, the legislature of 1804 rescinded the miserable act of the preceding year, and bestowed upon Mr. Whitney "marked commendations." In the midst of the perplexities of the year 1803, Mr. Whitney was farther distressed by the death of his partner, Mr. Miller. He was then left to bear up against his trials alone.

The recompense which he received from North and South Carolina relieved him from immediate embarrassment, but was nearly all swallowed up by the expensive lawsuits he was subjected to in Georgia. In 1807, the decision of Judge Johnson, to which we have before referred, was given in his favor, and the same was afterwards reaffirmed. But now the term of his patent had nearly expired. "More than *sixty* suits had been instituted in Georgia before a single decision on the *merits* of his claim was obtained." He made six journeys to Georgia, on this troublesome business, generally going by land, in an *open sulkey*, hazarding his health and life, and receiving, what he well thought, a most inadequate return for his invention. "In all my experience in the thorny profession of the law," says Hon. S. M. Hopkins, of New York, "I have never seen a case of such perseverance, under such persecutions; nor do I believe that I ever knew any other man who would have met them with equal coolness and firmness,

or who would finally have obtained even the partial success which he had. He always called on me in New York, on his way South, when going to attend his endless trials, and to meet the mischievous contrivances of men who seemed inexhaustible in their resources of evil. Even now, after thirty years, my head aches to recollect his narratives of new trials, fresh disappointments, and accumulated wrongs."

Although Mr. Whitney manifested so much perseverance in securing the profits of his invention, yet he became fully convinced that he had little to hope for from this source, and he therefore determined to devote his powers to some other enterprise. On the 14th of January, 1798, he concluded a contract, through the influence of Hon. Oliver Wolcott, Secretary of the Treasury, to furnish the United States government with ten thousand stand of arms, for one hundred and thirty-four thousand dollars; four thousand muskets to be delivered by the last day of September, 1799, and the remainder within the following year. This was a gigantic undertaking for one whose funds were limited, who was obliged to erect his manufactory, to find and instruct his workmen, to invent a considerable part of his machinery, and to make the whole of it. His very tools he was obliged to manufacture. His independence, enterprise, industry, and mechanical skill, all were taxed to the utmost. It was not a branch of manufacture with which he was particularly conversant, and he was obliged to rely almost solely on his own resources, and the sympathy and encouragement of his friends. Through their coöperation he obtained ten thousand dollars from

the bank of New Haven; five thousand more were advanced to him on the part of the United States, by the Secretary of the Treasury. With this he commenced his works at the foot of the East Rock, about two miles from New Haven. He soon found that it would be absolutely impossible to keep his contract so as to deliver the full number of muskets in season. "It was, in fact, eight years instead of two, before the whole ten thousand were completed."

The skill of Mr. Whitney greatly improved the manufacture of arms in the United States, and his machinery was afterwards adopted in nearly all the public and private manufactories of arms throughout the country. "In 1822, Mr. Calhoun, then Secretary of War, admitted, in a conversation with Mr. Whitney, that the government were saving twenty-five thousand dollars per annum, at the two public armories alone, by his improvements." Besides this, the machinery employed in the manufacture of arms was applicable, to a great extent, to many manufactures of iron and steel, and hence became of very general utility.

"Under the system of Mr. Whitney," says a writer to whom we are indebted for nearly all that is stated in this sketch,* "the several parts of the musket were carried along through the various processes of manufacture, in lots of some hundreds or thousands of each. In their various stages of progress, they were made to undergo successive operations by machinery, which not only vastly abridged the labor, but at the same time so fixed and determined their form and di-

* Silliman's Journal, vol. 21.

mensions, as to make comparatively little skill necessary in the manual operations. Such was the construction and arrangement of this machinery, that it could be worked by persons of little or no experience; and yet it performed the work with so much precision, that when, in the later stages of the process, the several parts of the musket came to be put together, they were as readily adapted to each other, as if each had been made for its respective fellow. A lot of these parts passed through the hands of several different workmen successively (and in some cases several times returned, at intervals more or less remote, to the hands of the same workman), each performing upon them every time some single and simple operation, by machinery or by hand, until they were completed. Thus Mr. Whitney reduced a complex business, embracing many ramifications, almost to a mere succession of simple processes, and was thereby enabled to make a division of the labor among his workmen, on a principle which was not only more extensive, but also altogether more philosophical, than that pursued in the English method. In England, the labor of making a musket was divided, by making the different workmen the manufacturers of different limbs; while in Mr. Whitney's system the work was divided with reference to its nature, and several workmen performed different operations on the same limb. It will be readily seen that under such an arrangement, any person of ordinary capacity would soon acquire sufficient dexterity to perform a branch of the work. Indeed, so easy did Mr. Whitney find it to instruct new and inexperienced workmen, that he uniform-

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ly preferred to do so, rather than to attempt to combat the prejudices of those who had learned the business under a different system." All the parts of his manufactory were arranged so as to be most permanently useful, and yet with a regard to their beauty. It was a maxim with him that *there is nothing worth doing that is not worth doing well.*

In the year 1812, he entered into another contract with the United States, to manufacture fifteen thousand stand of arms. He also made an engagement of a similar nature with the State of New York. In the same year, he applied to Congress for a renewal of his patent for the cotton gin. The grounds of the application were the great utility of the invention to the South, — the difficulties he had before labored under in securing his rights, and the fact that from some States he had received no compensation at all, and from no State had received the amount of *half a cent per pound* on the cotton cleaned with his machines in one year. "Estimating the value of the labor of one man at twenty cents per day, the whole amount which had been received by him for his invention was not equal to the value of the labor saved in *one hour*, by his machines then in use in the United States."

Notwithstanding this, the application was generally opposed by the Southern members, and was lost. "The difficulties with which I have had to contend," said Mr. Whitney, in a letter to Robert Fulton, "have originated, principally, in the want of a disposition in mankind to do justice. My invention was new, and distinct from every other; it stood alone. It was not interwoven with any

thing before known; and it can seldom happen that an invention or improvement is so strongly marked, and can be so clearly and specifically identified; and I have always believed, that I should have had no difficulty in causing my rights to be respected, if it had been less valuable, and been used only by a small portion of the community. But the use of this machine being immensely profitable to almost every planter in the cotton districts, all were interested in trespassing upon the patent right, and each kept the other in countenance. * * * At one time, but few men in Georgia dared to come into court, and testify to the most simple facts within their knowledge relative to the use of the machine. In one instance I had great difficulty in proving that the machine *had been used in Georgia;* although at the same moment, there were three separate sets of this machinery in motion within fifty yards of the building in which the court sat, and all so near that the rattling of the wheels was distinctly heard on the steps of the court-house!"

For the remaining years of his life, Mr. Whitney devoted himself with great success to the various concerns of his armory, all the operations of which he personally superintended. As early as 1822, he experienced the first attack of the disease to which he finally yielded. Its progress was attended with paroxysms of intense pain. These periods of suffering recurred at intervals during 1823 and 1824. In November of the latter year, the gripe of the disease was renewed too firmly to be unloosed; and, after two months of almost constant suffering, he expired on the 8th of January, 1825.

His death was regarded by the citizens of New Haven as a public calamity, and a eulogy was pronounced over his grave by President Day, of Yale College. During his last sickness, his mind was as active as ever; and his peculiar taste for invention manifested itself partly in devising methods for alleviating, so far as mechanical means could avail, the distresses of his terrible malady.

Mr. Whitney's acquaintance with public men was very general; and by all, without respect to political party, he was highly esteemed. "The operations of his mind," it has been said, "were not so remarkable for rapidity as for precision. This arose not from want of mental activity and ardor of feeling, but from habitual caution, and from his having made it his rule to be satisfied with nothing short of perfection." His ingenuity showed itself in the minute arrangements of his dwelling and the buildings about it, as truly as in those greater works by which he became so widely known. "The several drawers of his bureaus were locked by a single movement of one key of a peculiar construction; and an attempt to open any drawer except one, would prove ineffectual even with the right key, which, however, being applied in the proper place, threw all the bolts at one movement." The fastenings to the doors of his barns were peculiar and ingenious. Even the halters, by which the cattle were tied, were so contrived by a weight at one end, that the animal could freely move his head, but not easily draw out the rope so as to become entangled with it.

A writer, from whom we have quoted before,*

* Hon. S. M. Hopkins.

says of him, "I wish I had time to bring fully to your view, for your consideration, that particular excellence of mind in which he excelled all men that I ever heard of. I do not mean that his power of forming mechanical combinations was *unlimited*, but that he had it under such perfect *control*. I imagine that he never yet failed of accomplishing any result of mechanical powers and combinations which he sought for; nor ever sought for one for which he had not some occasion, in order to accomplish the business in hand. I mean that his invention *never failed*, and never *ran wild*. It accomplished, I imagine, without exception, all that he ever asked of it, and *no more*. I emphasize this last expression, from having in mind the case of a man, whose invention appeared to be more fertile even than Whitney's; but he had it under no control. When he had imagined and *half executed* one fine thing, his mind darted off to another, and he perfected nothing. Whitney perfected all that he attempted; carried each invention to its utmost limit of usefulness; and then reposed until he had occasion for something else."

Mr. Whitney's manners were dignified and courteous. Even during his severe sickness, he never lost his sense of what was due to propriety and decorum. This was owing in part to a liberal education, which, even when it does little else for a man, is apt to confer a certain undefinable ease and self-possession, and in part to his extensive intercourse with men of high standing in society, and of various attainment. In the words of the author of his memoir,* "It no doubt also con-

* Professor Olmsted, in Silliman's Journal.

tributed not a little to conciliate the respect of those States which purchased the patent right, to find in the person of the patentee, instead of some illiterate, visionary projector, a gentleman of elevated mind and cultivated manners, and of a person elegant and dignified." The time will come, it is to be hoped, when it will not be thought that a man must necessarily be unfitted for the higher arts of life, or the pursuits of business, by having received a liberal education. Men have indeed passed through the usual routine of college life, and have become unfortunate merchants, poor mechanics, unsuccessful farmers ; but we have yet to learn that their education made them so. The fault should rather be charged upon their lack of those qualities which would give success under any circumstances, or to the unfortunate choice of a pursuit for which they were radically unfitted, or to some of those unforeseen or uncontrollable circumstances against which neither industry nor sagacity is always a sure safeguard.

Mr. Whitney's moral qualities were as much cultivated as his intellectual. From his religious faith he derived the surest consolations under the adversities which he was called to meet, and amidst the sufferings of his last sickness. We will close this sketch with an extract from the eulogy pronounced by President Day : — "The higher qualities of his mind, instead of unfitting him for ordinary duties, were firmly tempered with taste and judgment in the business of life. His manners were formed by an extensive intercourse with the best society. He had an energy of character which carried him through difficulties too formidable for ordinary minds. With these

advantages, he entered on the career of life; his efforts were crowned with success. An ample competency was the reward of his industry and skill. He had gained the respect of all classes of the community; his opinions were regarded with peculiar deference, by the man of science as well as the practical artist. His large and liberal views, his knowledge of the world, the wide range of his observations, his public spirit, and his acts of beneficence, had given him a commanding influence in society. The gentleness and refinement of his manners, and the delicacy of his feelings in the social and domestic relations, had endeared him to a numerous circle of relatives and friends.

"And what were his reflections in review of the whole, in connection with the distressing scenes of the last period of life? 'All is as the flower of the grass: the wind passeth over it, and it is gone.' All on earth is transient; all in eternity is substantial and enduring. His language was, 'I am a sinner; but God is merciful. The only ground of acceptance before him is through the great Mediator.' From this mercy, through this Mediator, is derived our solace under this heavy bereavement. On this rest the hopes of the mourners, that they shall meet the deceased with joy at the resurrection of the just."

JOHN LEYDEN.

When Sir Walter Scott was engaged in preparing his "Border Minstrelsy," he accidentally met with a coadjutor in a quarter where he least expected it. There might be often seen at that time (it was the year 1800), in the small bookshop of Mr. Constable, at Edinburgh, a young man of uncouth "aspect and gestures," poring over the *ancient* volumes of that repository, "balanced on a ladder with a folio in his hand, like Dominie Sampson." A friend of Sir Walter, who visited this shop for the sake of discovering whatever in it could be of any assistance in the forthcoming work, fell into conversation with this stranger, and soon discovered that his mind was crowded with all sorts of learning, and especially that he was familiar with the early Scottish legends, traditions, and ballads. The young man was John Leyden, some of whose productions in verse, principally translations from the Greek, Latin, and Northern European languages, published in the Edinburgh Magazine, had for several years excited interest and curiosity. He was soon numbered among the friends of the great Scottish poet and novelist, and continued in intimate connection with him, until his early death.

John Leyden was born at Denholm, a small village of Roxburghshire, Scotland, on the 8th of September, 1775. His father was a farmer, of simple manners and irreproachable life. Shortly after the birth of this son, his parents removed to

a cottage belonging to his mother's uncle, where they lived for sixteen years. The family was humble, but cheerful, contented, and intelligent. Leyden was taught to read by his grandmother, who resided in the family. His great eagerness for learning early began to manifest itself. The histories of the Bible attracted his attention, and he soon learned every important event mentioned in the Old and the New Testament.

There were few books in the cottage except the Bible, and such others as were common to the Scotch peasants; but his young mind was strongly excited by the ballads and legends of the country, and by the stories recited to him by a blind uncle of his mother. He was ten years old before he went to school, and even then his opportunities for learning were very small. The school-house was two miles from his father's cottage; and the school was broken up, soon after he began to attend it, by the death of its master. But, during this short period of study, he had learned something, and his mind was roused to activity. For want of other subjects to dwell upon, he became more and more deeply interested in the traditions of the country. The romantic and superstitious tales of the nursery became food to his mind. When he was eleven years old, a companion gave him some account of an odd volume of the "Arabian Nights' Entertainments," which belonged to a blacksmith's apprentice, who lived some miles distant. It was winter; but the boy's mind, full of the wonders he had heard, could only be satisfied with a sight of the wonderful volume. He started early in the morning, and almost at daybreak reached the blacksmith's shop. The

apprentice was not at home, and he was obliged to travel still further to find him. He requested the privilege of reading the book in presence of the owner, for to borrow so great a treasure was more than he could expect. His humble request was refused. The little boy could not, however, give up his cherished hopes; and he actually stood all day beside the ungenerous apprentice, till the lad, ashamed of his own churlishness or worn out by Leyden's perseverance, actually gave him the book. He had suffered hunger and fatigue, but he had gained his treasure. Perhaps, according to the suggestion of Sir Walter Scott, "these fascinating tales, obtained with so much difficulty, may have given his mind that decided turn towards oriental learning, which was displayed through his whole life, and illustrated by his regretted and too early decease."

Another teacher came to the school, and taught him a smattering of Latin; another still, gave him a little knowledge of arithmetic. In the meantime, his desire for learning became so great, that his parents determined if possible to educate him, intending that he should one day become a minister in the Scottish church. He was accordingly placed for two years under the charge of Mr. Duncan, a Cameronian minister at Denholm. In November, 1790, with "little Latin, and less Greek," he entered the University at Edinburgh. To the well-educated and well-bred students of the University, he was an object of curiosity and of some merriment. Professor Dalzel used to say, that he had seldom known any young man who at first appeared worse prepared for college, and who so speedily surmounted the difficulties

under which he had labored. When he first rose to recite, his rustic air, his undaunted manner, his high harsh voice, his provincial accent, provoked the laughter of the class, and nearly destroyed the gravity of the professor. It was soon perceived, however, that he had acquired a vast store of information; and although, in his processes of study, he had not thought it necessary to become master of grammatical rules, his strength and acuteness of mind soon made themselves felt. To every branch of learning he applied himself with most determined resolution. The Greek language was his favorite, and he became familiar with its best authors. Besides the ordinary college studies, he plunged with great ardor into whatever others happened to attract his attention. It was his habit to devote himself with his whole soul, for the time being, to whatever he undertook, until he had in some measure mastered its difficulties, and had become so familiar with it, that at a future time he could pursue it with apparent ease. He used to say, when objections were made to the miscellaneous nature of his studies — "Never mind; — if you have the scaffolding ready, you can run up the masonry when you please." It must not, however, be inferred that because his retentive memory could thus accomplish much, the same method would be best for another. By his perseverance and strong determination, he became acquainted, not only with Greek and Latin, but with French, Spanish, Italian, German, and Icelandic; and also studied Hebrew, Arabic, and Persian.

Although he possessed so decided a talent for the acquisition of languages, he engaged eagerly

in various other branches of study. Mathematics was the only one for which he had little taste, and in which he made the least advance. His vacations, which occurred in the summer, he spent at home; reviewing and arranging, somewhat more methodically, what he had acquired during the winter at the University. He fitted up a sort of furnace for chemical experiments in a secluded part of the glen, near the village; but his chief place of study (his father's cottage not being large enough to afford him any) was the village church. Into this singular retirement he found his way through an open window: a retired pew served as a depository of his library and cabinet of curious specimens; and the sacredness of the place, as well as certain superstitious fears connected with it, to which Leyden now and then added some new element by means of tradition or story, preserved him from disagreeable intrusions.

The number of his books was small, and the country society, congenial to him, very restricted. Froissart's Chronicles, which he found in the library of a neighbouring gentleman, was an inestimable treasure. At college he gradually became intimate with the best scholars, among whom was the poet Campbell. After spending five or six years at Edinburgh, through the kindness of Professor Dalzel, he obtained a situation as a private tutor in a gentleman's family, which he retained until, in 1798, he accompanied two young gentlemen to the University of St. Andrew's.

The secluded situation, the great antiquity, and the decayed splendor of this northern seat of learning, quite suited his fancy; while its rich libraries gave him the opportunity of pursuing his

favorite studies. While at St. Andrew's, the fame of Mungo Park, whose travels had just become known, excited his interest in Africa. He was fascinated by the strangeness of the stories which he heard of that singular country, and devoted himself for a time to study its antiquities and history. As a result of his inquiries, he published, in 1799, an octavo volume, entitled "A Historical and Philosophical Sketch of the Discoveries and Settlements of the Europeans in Northern and Western Africa, at the close of the 18th century." He subsequently proposed to extend this to four volumes, and had made preparations for the purpose, and even completed arrangements for publishing it with Messrs. Longman & Co., when other events changed entirely the course of his life. The volume which was published, he wrote in about six weeks, and that too when his health was not very good. During the same period of his life, he was writing articles for the New London Review, and occasionally sending to the Edinburgh Magazine those short poems, translated from various languages, to which reference was made at the beginning of this sketch.

The winter of 1799–1800, he spent in Edinburgh, where he greatly enlarged the circle of his literary acquaintance, while he still pursued his studies with the utmost devotion. His abstemiousness was remarkable. He seemed to have no need of food, often during the entire day eating nothing but a morsel of bread; and being almost as indifferent to sleep. When interrupted during the day by the demands of society, he would make up the deficiency by studying nearly all the night. His pecuniary resources were very small; but,

with a noble resolution, he preserved his independence by severe economy. Never in his life did wealth seem to have peculiar charms for him, nor poverty its usual evils. In 1800, he was ordained as a minister in the Scottish church; but neither his habits nor character fitted him for the sacred calling. He never entered upon its solemn duties farther than to preach a few sermons. With greater zeal he devoted himself to literature. He made a tour to the Highlands and the Hebrides, and "investigated the decaying traditions of Celtic manners and story, which are yet preserved in the wild districts of Moidart and Knoidart."

Having become acquainted with Sir Walter Scott, as before suggested, just as that poet was preparing his "Minstrelsy of the Scottish Border," he entered into the publication with characteristic zeal, inspired not only by his friendship for Sir Walter, but by his native love of the subject, and patriotic attachment to Scotland. "An interesting fragment," says Scott, "had been obtained of an ancient historical ballad; but the remainder, to the great disturbance of the editor and his coadjutor, was not to be recovered. Two days afterwards, while the editor was sitting with some company after dinner, a sound was heard at a distance like that of the whistling of a tempest through the torn rigging of the vessel which scuds before it. The sounds increased as they approached nearer, and Leyden (to the great astonishment of such of the guests as did not know him) burst into the room, chanting the desiderated ballad, with the most enthusiastic gestures, and all the energy of the *saw-tones* of his voice. It turned out that he had walked between forty and

fifty miles, and back again, for the sole purpose of visiting an old person who possessed this precious remnant of antiquity."

In 1801, he published a new edition of an old tract, called the "Complaynt of Scotland." This singular production of the early part of the 16th century treats of the public and private life of Scotland, its poetry, music, and learning; and gave Leyden an opportunity, in a preliminary dissertation and by notes, to show his abundant stores of antiquarian knowledge. "The intimate acquaintance which he has displayed with Scottish antiquities of every kind, from manuscript histories and rare chronicles down to the tradition of the peasant, and the rhymes even of the nursery, evince an extent of research, power of arrangement, and facility of recollection, which has never been equalled in this department."

He also wrote a poem, entitled "Scenes of Infancy," which was afterwards published, and in which he commemorates the circumstance of his own youth, and the traditions of his native vale of Teviot. In the mean time he became filled with a desire to travel: to extend the boundaries of geographical and literary knowledge became, he said, "his thought by day, and his dream by night, and the discoveries of Mungo Park haunted his very slumbers." He actually began to correspond with the African Society, with a view to explore, under their auspices, the interior of those inhospitable regions which have been the grave of so many enterprising travellers.

When his serious purpose became fully known to his friends, they felt extremely anxious to divert him from the project. They thought that

his enthusiasm and ability to acquire foreign languages would find ample scope in the British East Indies, and accordingly applied to those in power for an appointment. Through the kindness of Mr. Dundas, one was promised; but the only place at his disposal was that of surgeon's assistant. This could only be held by one who had a medical degree, and who should pass a satisfactory examination before the medical board of the India House. Only six months were wanting before the examination must take place. Leyden was not discouraged. His determination rose in proportion as the attempt seemed formidable. What would have utterly appalled another, inspired him with fresh zeal. After incredible exertion, the task was accomplished. He received his diploma as surgeon at Edinburgh, and the degree of M.D. at St. Andrew's.

Leyden's fame as a scholar was now extended wide, and he numbered among his acquaintances and friends many men in the kingdom of high note as statesmen, poets, and scholars. Among the scholars was Alexander Murray (a sketch of whose life is given in the first volume of this compilation); among the future statesmen was Brougham; among the poets, Sir Walter Scott. In December, 1802, he received orders to join the fleet of Indiamen. He immediately went to London, but, from over-exertion and anxiety of mind, found himself unable to join the ship to which he was destined. It was fortunate for him that it was so, as the vessel was wrecked in going down the river, and a large number of the passengers were drowned. In consequence of this event and the changes attendant upon it, he did not sail until

April, 1803, when he bade farewell to England, never to see her again. "Thus set forth on his voyage," says Sir Walter Scott, "perhaps the first British traveller that ever sought India, moved neither by the love of wealth nor of power; and who, despising alike the luxuries commanded by the one, and the pomp attached to the other, was guided solely by the wish of extending our knowledge of Oriental literature, and distinguishing himself as its most successful cultivator." His commission as surgeon was but a cover to the learned pursuits in which he so vigorously engaged.

Soon after his arrival in India, he was attached to a commission for surveying the districts of the Mysore, and began to form some deliberate plan for active exertion. "There were but two routes," he says in a letter, "in a person's choice; first, to sink into a mere professional drudge, and, by strict economy, endeavor to collect a few thousand pounds in the course of twenty years; or, secondly, to aspire beyond it, and, by superior knowledge of India, its laws, relations, politics, and languages, to claim a situation somewhat more respectable." The difficulties were greater than he anticipated. His pay was small; his expenses in prosecuting his studies, large. Still he persevered, and, besides performing his duties as surgeon, marching by day and night in a hot climate, and attending to the hospital, he devoted more or less attention to the "Arabic, Persic, Hindostani, Mahratta, Tamal, Telinga, Canara, Sanscrit, Malayalam, Malay, and Armenian." It is no wonder that his health, before long, gave way under this pressure of labor. After trying

various situations in the Presidency of Madras, he concluded to sail for the Prince of Wales Island. Although thus disappointed, he was in no manner disheartened, and wrote to his friends in a style of gay exaggeration, which exhibited the perfect buoyancy of his spirits. After describing his studies and labors, he goes on: "To what I have told you, you are to add constant and necessary exposure to the sun, damps and dews from the Ganges, and putrid exhalations of marshes, before I had been properly accustomed to the climate; constant rambling in the haunts of tigers, leopards, bears, and serpents of thirty or forty feet long, that make nothing of swallowing a buffalo, by way of demonstrating their appetite in a morning; together with smaller and more dangerous snakes, whose haunt are perilous, and bite deadly; and you have a faint idea of a situation, in which, with health, I lived as happy as the day was long. It was occasionally diversified with rapid jaunts of a hundred miles or so, as fast as horse or bearers could carry me, by night or day — swimming through rivers — afloat in an old brass kettle at midnight! — O, I could tell you adventures to outrival any witch that ever swam in egg-shell or sieve; but you would undoubtedly imagine I wanted to impose on you, were I to relate what I have seen and passed through. No! I certainly shall never repent of having come to India. It has awakened energies in me that I scarcely imagined that I possessed."

At Puloo Penang (or Prince of Wales Island) his time did not pass unoccupied. He visited the coasts of Sumatra, and the Malayan peninsula, and picked up the materials for an essay, pub-

lished in the 10th vol. of the *Asiatic Researches*, on the *Languages and Literature of the Indo-Chinese Nations.*

Although much occupied while at this island, his spirits were sometimes much depressed, as seems evident from certain lines which he wrote for New Year's day, 1806. The last two stanzas are the following: —

"Friends of my youth, for ever dear,
Where are you from this bosom fled?
A lonely man I linger here,
Like one that has been long time dead.

Foredoomed to seek an early tomb,
For whom the pallid grave-flowers blow,
I hasten on my destined doom,
And sternly mock at joy or woe!"

In 1806, he removed from Penang to Calcutta, and, through the influence of Lord Minto, was appointed a professor in the Bengal College; but soon after was made Judge, and was thus called to act in a judicial capacity among the natives; for which, his knowledge of their language, manners and customs well fitted him. He had now a considerable salary; but, after remitting a part to his father in Scotland, he devoted the remainder entirely to advance his acquaintance with Eastern literature. He avoided the expensive establishments and ordinary luxuries of the East, and remained, as he was in Scotland, a frugal, patient, scholar.

In 1809, he was appointed Commissioner of the Court of Requests in Calcutta; and in the following year, having resigned this office, he obtained that of Assay-Master of the Mint. In 1811, the British government having undertaken an ex-

pedition against the island of Java, Dr. Leyden was called to accompany Lord Minto, both that he might investigate the manners, language, and literature of the tribes on the island, and because it was thought that his extensive knowledge of Eastern life might be of importance to the Governor-General in negociations with the natives. When they reached the island, his enthusiastic desire of being the first Briton who should land, led him to throw himself into the surf, and thus reach the shore among the foremost. Immediately afterwards, as soon as the troops took possession of Batavia, he hastened to examine a collection of Indian manuscripts, stored in a large warehouse. On leaving the ill-ventilated apartment, he was attacked with a fit of shivering. This was the premonitory stroke of the fever. In three days he was no more.

Thus died, August 21, 1811, at the early age of thirty-six, one whose literary promise was great, and whose actual performance was considerable. He aimed at accomplishing more in the way of Oriental learning than any who had preceded him in that difficult field. Had he lived, he would probably, with his industry and enthusiasm, have attained the goal of his wishes. But his extraordinary zeal led him to be careless of the means of preserving life and health. When at Mysore, shortly after his arrival from England, he was so ill that his physician despaired of his life; but the endeavors of his friends to induce him to relax his studies were vain. "When unable to sit up, he used to prop himself up with pillows, and continue his translations. One day, General Malcolm came in, and the physician said

to him, 'I am glad you are here; you will be able to persuade Leyden to attend to my advice. I have told him before, and now I repeat, that he will die if he does not leave off his studies and remain quiet.' 'Very well, Doctor,' exclaimed Leyden, 'you have done your duty, but you must now hear me; *I cannot be idle*, and whether I die or live, the wheel must go round to the last;' and he actually continued, under the depression of a fever and a liver-complaint, to study more than ten hours each day." His great abstemiousness doubtless contributed greatly to his usual good health.

His method of studying was somewhat singular. The following account is from the pen of General Sir John Malcolm: — "It is not easy to convey an idea of the method which Dr. Leyden used in his studies, or to describe the unconquerable ardour with which these were pursued. During his early residence in India, I had a particular opportunity of observing both. When he read a lesson in Persian, a person near him, whom he had taught, wrote down each word on a long slip of paper, which was afterwards divided into as many pieces as there were words, and pasted in alphabetical order, under different heads of verbs, nouns, &c., into a blank book that formed a vocabulary of each day's lesson. All this he had, in a few hours, instructed a very ignorant native to do; and this man he used, in his broad accent, to call 'one of his mechanical aids.'" — "His memory was most tenacious, and he sometimes loaded it with lumber. When he was at Mysore, an argument occurred upon a point of English history.

it was agreed to refer it to Leyden, and, to the astonishment of all parties, he repeated verbatim the whole of an act of parliament in the reign of James, relative to Ireland, which decided the point in dispute. On being asked how he came to charge his memory with such extraordinary matter, he said that several years before, when he was writing on the changes which had taken place in the English language, this act was one of the documents to which he had referred as a specimen of the style of that age, and that he had retained every word in his memory."

In his manners he was eccentric and rough, and he often trespassed against the outward laws of ceremony. His voice was harsh; and in conversation, especially in argument, he used it in its loudest key, and never hesitated to express himself in the most vigorous language. But his defects were atoned for by great virtues. His temper "was mild and generous, and he could bear, with perfect good humor, raillery on his foibles." He was full of good humor, kindness, and magnanimity, and, with all his boldness, never intentionally wounded the feelings of others. He won the undoubted love of many men of great minds, and was favored with the friendship of women of high culture and refinement. "No man," says Lord Minto, "whatever his condition might be, ever possessed a mind so entirely exempt from every sordid passion, so negligent of fortune, and all its grovelling pursuits, — in a word, so entirely disinterested, — nor ever owned a spirit more firmly and nobly independent."

His literary and poetical works have been pu

lished since his death. In 1826, the *Memoirs of Baber*,* chiefly translated by him, and completed by his friend William Erskine, were published for the benefit of his father. His literary property was committed to the care of Mr. Heber. When Sir John Malcolm visited Lord Minto, in Roxburghshire, he inquired for the elder Leyden, and, in the course of the conversation with him, he expressed his regret at the delays in realizing the small property of the son; and "remarked that he was authorized by Mr. Heber to say, that such manuscripts as were likely to produce a profit should be published as soon as possible for the benefit of his family." "Sir," said the old man with animation and with tears in his eyes, "God blessed me with a son, who, had he been spared, would have been an honor to his country! As it is, I beg of Mr. Heber, in any publication he may intend, to think more of *his* memory than of *my* want. The money you speak of would be a great comfort to me in my old age; but, thanks be to the Almighty, I have good health, and can still earn my livelihood; and I pray therefore of you and Mr. Heber to publish nothing that is not for my son's good fame." One can hardly find, in the lower or the higher walks of life, the expression of a more delicate and tender regard for the good name of a departed friend.

Leyden was remembered with great affection by his friends, and by few with more sincerity and warmth of feeling than by Scott, who gives a

* An interesting account of this remarkable work, written in the early part of the 16th century, may be found in the Edinburgh Review, for June, 1827.

brief tribute to his memory in "The Lord of the Isles."

"The clans of Jura's rugged coast
Lord Ronald's call obey,
And Scarba's isle, whose tortured shore
Still rings to Corrievreken's,
And lonely Colonsay:—
Scenes sung by him who sings no more!
His bright and brief career is o'er,
And mute his tuneful strains;
Quenched is his lamp of varied lore,
That loved the light of song to pour;
A distant and a deadly shore
Has Leyden's cold remains."

Lord of the Isles.—Canto 4, *st.* 11.

ROBERT STEPHENS.

The early printers were, almost of necessity, scholars. Books being published mainly for the use of the learned, they were obliged, not merely to attend to the mechanical part of their trade, but to collate manuscripts and determine the true reading of the text. Their influence in advancing the general interests of society, by diffusing knowledge, can hardly be overrated. Aldus Manutius, in Italy, in the early part of the 16th century, had a reputation for learning and critical skill which gained him the friendship of the most distinguished scholars in the world. Under circumstances of great difficulty, he produced the earliest printed edition of many of the Greek and Roman classics. He published, also, Greek and Latin grammars, and the earliest Greek and Latin dictionary; while, at the same time, he gave lectures on ancient literature. His press was established at Venice, and the symbol on the title-page of his books was a fish entwined about an anchor; a symbol which some modern printers have adopted, while they have also entitled themselves his disciples. His trade and his learning were inherited by his son.

A circumstance of apparently slight importance, in connection with the press of Manutius, has rendered the year 1501 "a sort of epoch in literary history. It was, simply, that in that year he introduced a new Italic character, more easily read than the Roman; and what was of still more

consequence, began to print *octavos* and *duodecimos*, instead of the old *folios*. 'With what pleasure,' says a French historian, 'must the studious man, the lover of letters, have beheld these benevolent octavos, these Virgils and Horaces, contained in one little volume, which he might carry in his pocket while travelling or in a walk; which, besides, cost him hardly more than two of our francs; so that he could get a dozen of them for the price of one of those folios, that had hitherto been the sole furniture of his library. The appearance of these correct and well-printed octavos ought to be as much remarked as the substitution of printed books for manuscripts itself.'"

Contemporary with this family in Italy, was that of the Stephenses in France. ROBERT, one of the most eminent, was born at Paris, in 1503. His father was a printer, remarkable for the correctness of his editions. His mark was the old arms of the University of Paris, with the motto, *Plus olei quam vini*. After the death of his father, Robert worked for a time with Simon de Colines, who had been his father's partner; and during this time published an edition of the New Testament, more correct and more convenient than any which preceded it. This, however, rendered him suspected, by the Doctors of the Sorbonne (as the Theological College was called), of a tendency towards Protestantism. The work had a rapid sale. About the year 1526, he dissolved partnership with de Colines, and established a press of his own. He had previously married Petronilla, the daughter of the celebrated printer Jodocus Badius. Her learning was a fit accompaniment to that of her husband, as she taught

Latin to her household so effectually, that every member of it could speak that language. The year after he established himself alone, he published one of the treatises of Cicero; and, from that time till his death, he hardly suffered a twelvemonth to pass without sending forth a new edition of some one of the classics, with greater accuracy and beauty than had been seen before. In order to insure correctness, he was accustomed to hang his proof sheets in a conspicuous place, and offer a reward to him who should detect an error.

A work upon which he expended the most careful labor, was his first edition of the Latin Bible. To make it as perfect as possible, he compared the text with manuscripts, and consulted the ablest divines; — he also had new types cast, so that its appearance should equal its accuracy. The work, however, served as an occasion of reviving against him the jealousy of the Sorbonnists, who not only suspected him of protestantism, but regarded with dislike the favor he received from the reigning monarch, Francis I. The king, however, sustained him; and he soon published the first edition of his *Thesaurus Linguæ Latinæ*, a work of great research, and which he continued to improve on the issue of every succeeding edition.

In 1539, he was appointed King's printer of Latin and Hebrew; and, at his suggestion, Francis caused to be cast a beautiful fount of types, which, one of his biographers says, are still preserved in the royal printing office of Paris. After the death of the king, feeling that he had no security against the attacks of his enemies, he left Paris, and retired to Geneva. Here, if not before, he

took open ground in favor of the Reformation, and continued to publish works of great value, for which he received public marks of honor from the city. He died at Geneva, in the year 1559, at the age of fifty-six. He is said to have been the editor of not less than three hundred and sixty books. Among them were the Hebrew Bible, in two forms, — the Latin Bible, — the Greek New Testament, — the works of Cicero, Terence, Plautus, and other classic writers. His original works were also numerous, the greatest of which was his Latin Thesaurus. He also projected a Greek Thesaurus, but did not live to carry the preparation of it to a very great extent. His intended commentary on the Bible was in like manner never fully undertaken. To his enemies of the Sorbonne, he replied in a very able manner. The mention of these works, which are but a part of what he accomplished, will show in some degree the diligence and learning of this remarkable man. It was the custom of the early printers to have a mark with an appropriate device. "His mark was an olive with branches, and the motto, *Noli altum sapere*, to which sometimes were added the words *sed time*."

The most honorable testimonials were borne by distinguished men to his learning and excellent character. Beza pronounced a high eulogium upon him. De Thou ranks him higher than Aldus Manutius, and, with a feeling which would seem uncommon in his time, affirms that Christendom was more indebted to him than to its greatest conquerors; and that the reign of Francis I. was more honored by his life, than by the renowned exploits of that prince himself.

HENRY STEPHENS.

Henry Stephens was the eldest son of Robert, the subject of the preceding brief sketch. He was born at Paris, in 1528, and early gave promise of the remarkable eminence to which he attained in learning. It is said, that, having heard his tutor instructing other pupils in the Medea of Euripides, he was so much delighted with the sweetness of the language, that he was inspired with an unconquerable desire to learn it. To this his father assented, although it was contrary to the usual course to study Greek before studying Latin. His progress corresponded with his enthusiasm. He was soon able to read Euripides, and learned many of the plays by heart. Latin, which was to a considerable extent the spoken language of his father's family, he was early familiar with; and he also mastered arithmetic and geometry. At the age of nineteen, he set out on his travels for the sake of examining foreign libraries, and becoming acquainted with literary men. He spent two or three years in Italy, and, either before his return to Paris, or soon after, visited the Netherlands and England. In these travels he added to his store of learning, and obtained manuscripts of parts of the ancient classics which were not before known to be in existence.

When his father removed to Geneva, he accompanied him, but, in the year 1554, returned again to Paris, and established himself there as a printer. He soon published an edition of Anacreon;

and in the same year we hear of him at Rome and Naples, where he went in the service of the French government. Here he narrowly escaped losing his life, and, it is said, only saved himself from being arrested as a spy, by his facility in speaking the Italian language. Danger, however, did not deter him from pursuing his literary labors; and he took the opportunity to visit Venice, in order to examine some valuable manuscripts of Xenophon and Diogenes Laertius. After his return, about the year 1557, he began that series of classical publications which his press continued to throw out for many years, enriched with notes and prefaces, prepared with great labor by himself, and "which are read by scholars to this day with profit and admiration." "The press of Stephens," in the words of Mr. Hallam, "might be called the central point of illumination to Europe. In the year 1557 alone, he published more editions of ancient authors than would have been sufficient to make the reputation of another author." In publishing these works, he was subjected to expenses which he could not have borne but for the assistance of Ulric Fugger, a rich and liberal German nobleman. From gratitude to this benefactor, he called himself his printer: "*Illustris viri Huldrici Fuggeri typographus.*"

In 1559, by the death of his father, and the consequent responsibilities thrown upon him as executor of the estate and guardian of his brothers, he was afflicted with melancholy, from which it was difficult to rouse him. He was also subjected to another danger, that of being driven from Paris on account of his Protestant opinions, of which he had made a public profession. Be-

sides this, he had published a French translation of Herodotus, to which he had added a collection of witty anecdotes and satirical remarks directed against the monks; and he feared that the discovery would lead to violence on their part, in return.

He continued, however, his literary labors, and, in 1572, published his *Greek Thesaurus*. He had been employed upon it for twelve years; and when we consider the difficulties which he had to surmount, the scanty materials which the more ancient dictionaries afforded, and the size of the work, we may well pronounce it to be among the greatest literary undertakings ever completed by one man. The cost of this enterprise entirely exhausted his pecuniary resources. He expected a recompense in the sale of the work upon which the learned bestowed the highest commendations; but in this he was sadly disappointed, through the treachery of one of his workmen. John Scapula was employed by Stephens as a corrector of the press, at the time when he was publishing the Thesaurus. The opportunity of using the materials of his master for his own advantage was too tempting to be resisted by Scapula; and he accordingly employed himself in preparing from the great work of Stephens, a smaller Greek lexicon, which, from its more convenient size and price, took the place of the more costly original. By this treachery, Stephens was reduced to poverty.

After suffering heavy pecuniary losses, he left France, and for a time resided in Germany, where he labored still as an author. The reigning monarch in France, Henry III., became so much interested in some of his writings, as to give him a small pension, and to invite him to reside at the

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court. It is also said that he granted him 3,000 livres for a work on the excellence of the French language. Prosperity seems, however, to have deserted him. Promises of assistance from the court were forgotten or disregarded in the distracted state of the kingdom, and the king himself died soon afterwards. Another calamity befell him in the loss of his wife. Thus afflicted, and disappointed in the hope of retrieving his fortunes, he seems to have spent the latter part of his life in wandering from city to city, perhaps with the forlorn hope of some unlooked-for success. He resided a while in Orleans, in Frankfort, in Geneva, and in Lyons. He is even said to have travelled as far as Hungary. During his last journey to Lyons, he was seized with sickness, and died in the hospital of that city, in the month of March, 1598, aged seventy years.

The world has not always been liberal nor grateful, nor even kind, to her wise men. She has sometimes suffered them to starve, sometimes commended the poisoned chalice to their lips. But let no one, therefore, neglect the pursuit of learning and wisdom; for it is better to suffer with them than to prosper without them. And, after all, they, more often than otherwise, carry with them an abundant temporal reward. Notwithstanding the sad termination of this great scholar's life, no misfortune could take from him the intellectual riches he had so diligently amassed.

Some idea may be formed of the extent of the labors of Henry Stephens, by a simple mention of the principal classic authors whose works he ably edited, enriching them with learned prefaces, and illustrating them with notes of great value.

Among them are Homer, Pindar, Æschylus, Xenophon, Thucydides, Herodotus, Sophocles, Plato, Plutarch, Callimachus, Horace, Virgil, and Pliny the younger, not to mention others. Besides this, he published Latin translations of Anacreon, Theocritus, Bion and Moschus, Pindar, Æschylus and Sophocles, &c., &c., all of which have been pronounced excellent.*

He was also quite a voluminous original author. The bare titles of his works would cover several pages of this volume. He wrote poems, both grave and gay, and a Concordance to the New Testament; but, for the most part, devoted himself to criticisms, more or less direct, upon the subjects of his classical studies. His great work, the Greek Thesaurus, an amazing monument of labor and learning, has not yet been superseded. A beautiful edition was published, not long since, by the Messrs. Valpy, and a still more beautiful edition is at the present time in the process of publication at Paris. He left three children, a son and two danghters, one of whom was married to the learned Isaac Casaubon. His end was a sad one; but his life was useful, and honorable, and virtuous, and his name will always be reverently cherished by the scholars of all lands.

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* "He was so diligent and accurate in his translations, of such skill in giving the character of his author, of so great perspicuity and elegance, as to be called '*The Translator par excellence.*'" See *Hallam's Hist. of Lit.*

BENJAMIN WEST.

The subject of the following sketch, one of the earliest and most distinguished of American painters, was a native of Pennsylvania. He was born near Springfield, Chester County, on the 10th of October, 1738. His family were Quakers, and emigrated to America in 1699: his father, however, being left at school in England, did not join his relatives until 1714. The native tendencies of West were early manifested. It is said that, when he was but six years old, his mother left him for a few moments to keep the flies from an infant sleeping in the cradle. While he was thus employed, the beauty of the little creature, smiling in its sleep, attracted his attention, and he immediately endeavored to delineate its portrait with a pen and ink. His mother soon returned, and was surprised and delighted at the attempt, in which she thought she detected a resemblance to the sleeping infant.

Not long after this, he was sent to school, but was permitted to amuse himself, during his hours of leisure, in drawing flowers and animals with a pen. He soon desired to represent the color as well as the shape; but here he was at a loss, for the community in which he lived, made use of no paints but the most simple and grave. His American biographer says, that "the colors he used were charcoal and chalk, mixed with the juice of berries; but with these colors, *laid on* with the hair of a cat, drawn through a goose-

quill, when about nine years of age, he drew on a sheet of paper the portraits of a neighboring family, in which the delineation of each individual was sufficiently accurate to be immediately recognized by his father, when the picture was first shown to him. When about twelve years old, he drew a portrait of himself, with his hair hanging loosely about his shoulders."

His stock of colors was soon considerably enlarged by a party of Indians, who visited Springfield in the summer; and, becoming interested by the sketches which the boy showed them, taught him to prepare the *red* and *yellow* paints which they were accustomed to use. A piece of indigo which his mother gave him, furnished him with *blue;* and with these three simple primary colors, the young artist felt himself rich.

One of the earliest patrons of the young painter was the father of General Wayne, who lived at Springfield. Happening to notice one day several heads, drawn upon boards with ink, chalk, and charcoal, he was so much pleased with them, as to ask the privilege of taking them home. Next day he called again, and presented young West with six dollars. This circumstance had considerable effect in inducing him subsequently to make painting his profession.

Another circumstance, which occurred about this period, afforded him inexpressible delight. A merchant of Philadelphia, Mr. Pennington, being on a visit to the family, was so much pleased with the efforts of Benjamin, that he promised him a box of colors and brushes. On his return to the city, he not only fulfilled his promise, but added to the stock, several pieces of canvass prepared

for painting, and "six engravings by Grevling." Nothing could exceed his delight at this unexpected treasure. He carried the box to a room in the garret, and immediately began to imitate the engravings in colors; and even ventured to form a new composition by using the figures from the different prints. "The result of this boyish effort to combine figures from engravings, and invent a system of coloring, was exhibited sixty-seven years afterwards, in the same room with the "Christ Rejected."

It was not long before it began to be known, that a lad lived in Springfield, who gave great promise of excellence as a painter; and before many years he received applications to paint portraits. He was indulged too with a visit to Philadelphia, where he was greatly excited by seeing several pictures of merit. Books were given or lent him, from which he received some general idea of the principles of the art. His first historical composition was the death of Socrates. The subject was proposed to him by a person of the name of William Henry, of Lancaster, a gunsmith, of a literary turn of mind, who encouraged him to undertake something of more consequence than portraits. Young West was unacquainted with the history of Socrates; but Henry lent him a translation of Plutarch, which in a measure supplied the deficiency, and after a time the picture was finished, and attracted much attention.

It led also to an acquaintance which proved of great advantage to the future painter. Dr. Smith, Provost of the College at Philadelphia, being called to Lancaster to arrange the studies of the grammar school, saw the picture, and, after

conversing with the young artist, offered to assist him in gaining that education of which he now began to feel the need. The result of this offer was, that Benjamin went to Philadelphia, and resided with his brother-in-law, Mr. Clarkson.

In the capital of Pennsylvania, he labored diligently at the profession which he had now chosen, and under very advantageous circumstances. He had access to a few fine paintings, and especially to Gov. Hamilton's collection, in which was a St. Ignatius, by Murillo. It had been captured in a Spanish vessel, and West copied it, without knowing its author or fully appreciating its value. An anecdote which is given of him at this period of his life, exhibits his early habit of observation. While in Mr. Clarkson's family, he was taken ill; and, being in a weak state, no light was admitted into the room, except what found its way through the cracks in the window-shutters. When his fever had subsided, as he was lying in bed, he was surprised to see "the form of a white cow enter at one side of the roof, and, walking over the bed, gradually vanish at the other. The phenomenon surprised him exceedingly, and he feared that his mind was impaired by his disease, which his sister also suspected, when, on entering to inquire how he felt himself, he related to her what he had seen. She soon left the room, and informed her husband, who accompanied her back to the apartment; and as they were both standing near the bed, West repeated the story, exclaiming that he saw, at the very moment in which he was speaking, several little pigs running along the roof. This confirmed them in the apprehension of his delirium, and they sent for a physician;

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but his pulse was regular, the skin moist and cool, the thirst abated, and, indeed, every thing about the patient indicated convalescence. Still the painter persisted in his story, and assured them that he then saw the figure of several of their mutual friends passing on the roof, over the bed; and that he even saw fowls picking, and the very stones of the street. All this seemed to them very extraordinary; for their eyes, not accustomed to the gloom of the chamber, could discern nothing; and the physician himself, in despite of the symptoms, began to suspect that the convalescent was really delirious. Prescribing, therefore, a composing mixture, he took his leave, requesting Mrs. Clarkson and her husband to come away and not disturb the patient. After they had retired, the artist got up, determined to find out the cause of the strange apparitions which had so alarmed them all. In a short time, he discovered a diagonal knot-hole in one of the window-shutters; and, upon placing his hand over it, the visionary paintings on the roof disappeared. This confirmed him in an opinion that he began to form, that there must be some simple natural cause for what he had seen; and, having thus ascertained the way in which it acted, he called his sister and her husband into the room, and explained it to them."

On his return, soon after, to his father's, he had a box made with one of the sides perforated, and contrived, without ever having heard of the instrument, to invent the *Camera obscura*. On mentioning his discovery some time afterwards to a friend, he was surprised to find that he had invented only what was known to others before. But though it proved to be "a new-found old in-

vention," he deserved not the less praise for ingenuity.

At about the age of eighteen, West was afflicted by the death of his mother. The attractions of home being much diminished by this painful event, he soon established himself in Philadelphia as a portrait painter, where his youth, his skill, and his moderate prices, soon brought him a good number of sitters. Some of these early paintings are still preserved. From Philadelphia he went to New York, where he doubled his prices, and soon found himself accumulating enough to enable him to gratify the most ardent desire of his soul, which was to visit Italy. This event was brought about sooner than he expected. Mr. Allen, a wealthy merchant of Philadelphia, was fitting out a ship for Leghorn, in which his son was going out for the benefit of travel. West heard of the vessel while in New York, and determined to seize the opportunity of visiting the land of painters. In the mean time, his friend and former instructor, Dr. Smith, had obtained from the owners of the vessel, permission for him to accompany the young merchant. Every thing was thus far favorable, and he was destined to receive still other proofs of the kindness of his friends and acquaintances. Of all painters, indeed, he was perhaps, throughout life, the most fortunate in the favor with which he was almost universally regarded, and in the unsought and unexpected advantages which the kindness of others bestowed upon him. He owed this in part to his high talents, and still more to his quiet, unobtrusive, and modest manners, and to the strict integrity by which he was always characterized. His acquaintances became

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friends, and his friends exerted themselves for his advantage, because they saw that prosperity did not elate him unduly, and that every advantage was wisely used.

West was engaged on the portrait of Mr. Kelly, a merchant of New York, when he determined to sail from Philadelphia. He mentioned his plan to Mr. Kelly, who approved his determination, paid him ten guineas for the painting, and gave him a letter to his agents in Philadelphia. On presenting the letter, he found it contained an order for fifty guineas, "a present to aid in his equipment for Italy." To record such acts of kindness, is one of the most agreeable things in the biography of a man of genius.

In 1760, at the age of twenty-one years, the artist left his country, to which he never again returned. His voyage was prosperous, and he was kindly received at Leghorn by Messrs. Jackson and Rutherford, the correspondents of Mr. Allen. He soon started for Rome, carrying letters to many persons of distinction. The circumstances under which he came were very favorable. He was introduced to the most valuable society, and was an object of considerable curiosity as an American and a Quaker, who had come to study the fine arts. On being introduced to Cardinal Albani, who, though old and blind, was considered a great judge of art, one of the first remarks made by the prelate, as he passed his hands over the face of the young artist, in order to judge of his countenance, was "This young savage has very good features, but what is his complexion? Is he black or white?" The English gentleman who introduced him replied, that he was "very

fair." "What!" said the cardinal, "as fair as I am?" As the complexion of his eminence was a deep olive, this question produced great merriment, and the expression "as fair as the Cardinal," became for a time a proverb. "It was a matter of astonishment," says one of West's biographers, "when it was found that the young man was neither black nor a savage, but fair, intelligent, and already a painter. West became emphatically the lion of the day in Rome."*

In order to exhibit his talent, West painted the portrait of a gentleman to whom he was indebted for many favors,—Mr. Robinson, afterwards Lord Grantham. It was received with great approbation by the judges of art, and pronounced superior in some respects to the productions of Raphael Mengs, who was at this time the first painter in Rome. Mengs himself very cordially commended the young American, and gave him some excellent advice. "You have already," said he, "the mechanical part of your art. What I therefore recommend to you is to examine every thing worthy of attention here, making drawings of some half dozen of the best statues; then go to Florence, and study in the galleries; then proceed to Bologna, and study the works of the Caracci: afterwards visit Parma, and examine attentively the pictures of Corregio; and then go to Venice, and

* The mistake as to the complexion of Americans, has been made elsewhere than in Italy. An acquaintance of ours, who was educated in part at Versailles, France, was frequently an object of curiosity to visiters, who more than once, on seeing him for the first time, remarked, with a strong exclamation of surprise, *Il n'est pas noir*,—"He is not black."

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view the productions of Tintoretto, Titian, and Paul Veronese. When you have made this tour, return to Rome, paint an historical picture, exhibit it publicly, and then the opinion which will be expressed of your talents will determine the line of art which you ought to follow."

This judicious advice, West was prevented from following immediately, by illness, brought on perhaps by the continued excitement to which he was subjected. He returned to Leghorn, for greater repose; nor was he, for nearly a year, able fully to resume his studies and labors as an artist. During this time, the reputation he had acquired at Rome became known in America, and his generous friends, Mr. Allen and Gov. Hamilton, determined that the career of so promising an artist should not be impeded by want of means. They sent orders to their bankers at Leghorn, to give him unlimited credit. This great and unlooked-for liberality was of the utmost importance to Mr. West, whose limited funds were nearly exhausted. Mr. Galt very properly remarks, that "a more splendid instance of liberality is not to be found even in the records of Florence. The munificence of the Medici was excelled by that of the magistracy of Philadelphia."

He now commenced his tour under favorable auspices, and visited, with great advantage, galleries of the different schools in the most important cities of Italy. He was everywhere received with favor, and was chosen a member of the Academies in Parma, Bologna, and Florence. A similar honor was afterwards conferred upon him in Rome. While in Italy, he painted his "Cimon and Iphigenia," and "Angelica and Me-

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dora," which established his reputation as an historical painter. He also made a very excellent copy of the St. Jerome of Corregio. This picture was, and we presume is now, in possession of the family of Mr. Allen, and in America.

Having now accomplished his purposes in visiting Italy, he began to think of returning home, but, in accordance with the advice of his father, determined first to visit England, the mother country, to which the colonists still looked with great affection. His arrangements were soon made, and he journeyed through France, visiting whatever was worthy to be seen, and on the 20th of June, 1763, arrived in London. As it was not then his intention to remain in England, he immediately visited the collection of paintings in London, and at Hampton Court, Windsor, and Blenheim; and also spent some time with the friends of his father, who resided in Reading. In the mean time he became acquainted with the most noted of the British painters, among whom was Sir Joshua Reynolds, and with Mr. Burke, whose knowledge of art was as accurate and profound as his knowledge of the science of government.

Encouraged by an examination of the works of the popular painters, as well as by the voice of his friends, he determined to try his success as a painter. In the department of historical painting, he was almost without a rival. There was then no distinguished historical painter in England. He exhibited some of his paintings, and received great praise and encouragement. As an illustration, however, of the state of English taste at this time, and of the timidity of the lovers of art in

purchasing the productions of a modern artist in this the highest department of skill, it is stated, that, while one of West's earliest paintings, founded on the story of Pylades and Orestes, attracted so much attention that his servant was employed from morning till night in opening the door to visiters, and received a considerable sum of money by showing it, the master was obliged to content himself with empty praise; "no mortal ever having asked the price of the work, or having offered to give him a commission to paint any other subject."

It was not long, however, before his merit was seen, and his skill employed. He painted for Dr. Newton the "Parting of Hector and Andromache;" and the "Return of the Prodigal Son," for the bishop of Worcester; and soon received the liberal offer of seven hundred pounds a year (nearly $3,500) from Lord Rockingham, if he would embellish with historical paintings his mansion in Yorkshire. He preferred, however, to take his chance with the public.

Although he now felt himself established in England, on account of his recent success, he still thought of returning for a time to America, in order to marry a lady to whom he had long been attached. Some of his friends, however, more prudent than himself, feared that his absence might avert some portion of the public favor, and suggested another expedient to which the cool and considerate artist yielded. The result was, that Miss Shewell accompanied West's father to England, and was married to the painter, on the 2d of September, 1765.

Through the kindness of Dr. Drummond, archbishop of York, West was introduced to the king,

George III., by whom he was received with very great kindness. The picture of "Agrippina," painted for the archbishop, was exhibited to his majesty and to the queen by the artist in person; and, before he retired from the room, an order was given for painting the "Departure of Regulus from Rome," the subject being suggested by the king himself. This was the beginning of an acquaintance with the monarch, we may almost say of friendship, which continued for forty years.

Trifling circumstances sometimes do much to extend a person's reputation. An amusing writer says, "that the Duke of Wellington is the best known man in London, partly because of his victory at Waterloo, and partly because of his very remarkable *nose*." We will give an anecdote of West, as we find it in his biography by Allan Cunningham: — "West was a skilful skater, and in America had formed an acquaintance on the ice with Colonel, afterwards too well known in the Colonial war, as General Howe. This friendship had dissolved with the thaw, and was forgotten, till one day the painter, having tied on his skates at the Serpentine, was astonishing the timid practitioners of London by the rapidity of his motions, and the graceful figure which he cut. Some one cried out, 'West! West!' it was Colonel Howe. 'I am glad to see you,' said he, 'and not the less so that you come in good time to vindicate my praise of American skating.' He called to him Lord Spencer Hamilton, and some of the Cavendishes, to whom he introduced West as one of the Philadelphia prodigies, and requested him to show them what was called 'the salute.' He performed the feat so much to their satisfac-

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tion, that they went away spreading the praise of the American skater over London. Nor was the considerate Quaker insensible to the value of such commendations: he continued to frequent the Serpentine, and to gratify large crowds by cutting the Philadelphia Salute. Many, to their praise of his skating, added panegyrics on his professional skill; and not a few, to vindicate their applause, followed him to the easel, and sat for their portraits."

British artists, at the time when West arrived in England, were associated under the name of "The Society of Incorporated Artists," into which the American was admitted. While he was painting his *Regulus* for the king, dissentions arose in the Society, which resulted in the secession of Reynolds and West among others, and the formation of the Royal Academy, of which Reynolds was elected President. "The Death of Wolfe," which West soon painted, has ever been considered as one of his best productions; it is also worthy of remark, as having led to a great change in the practice of English artists. Until then, it had been common for them to represent the moderns with the costume of Greeks and Romans. West determined to throw aside this pernicious habit, and to represent the English and French generals and soldiers in the actual military dress of the day. He thought he should gain far more in the life and truth of expression, than he should lose in picturesqueness and grace. He was encountered, however, by the strong prejudices of the public, and the decided opinion of the painters. The archbishop of York and Sir Joshua Reynolds took particular pains to dissuade the

artist from the hazardous experiment. The result showed the good judgment of West. He has represented the real event as it presented itself to his own mind, idealizing it only so far as is necessarily demanded by the laws of art. Reynolds visited the painting again when it was finished; and after sitting before it for half an hour, and examining it with minute attention, he rose, and said to Dr. Drummond, who had again accompanied him, "West has conquered; he has treated his subject as it ought to be treated; I retract my objections. I foresee that this picture will not only become one of the most popular, but will occasion a revolution in art."

Being now fully in favor with the public, and enjoying the royal patronage without reserve, the painter formed designs commensurate with his honorable position. He not only executed various works upon classical and historical subjects, but suggested a series of pictures to illustrate the progress of revealed religion. "No subtle divine," says Mr. Cunningham, "ever labored more diligently on controversial texts than did our painter in evolving his pictures out of this grand and awful subject. He divided it into four dispensations, — the Antediluvian, the Patriarchal, the Mosaical, and the Prophetical. They contained in all thirty-six subjects, eighteen of which belonged to the Old Testament, the rest to the New. They were all sketched, and twenty-eight were executed, for which West received in all twenty-one thousand seven hundred and five pounds. A work so varied, so extensive, and so noble in its nature, was never before undertaken by any painter."

When the war broke out between England and the American colonies, West was much distressed by it, but still preserved the favor of George III., and devoted himself assiduously to his art. He was enabled by his position to afford aid to Americans in England, which he was always very ready to do, and perhaps to communicate useful intelligence to the king respecting the resources of his native land.

On the death of Reynolds, in 1792, West was elected his successor as President of the Royal Academy, which position he retained, with the exception of a few months, until his death. The king, on this occasion, wished to confer upon him the distinction of knighthood; an honor which the painter saw fit to decline.

While the health of George III. remained good, West was never at a loss for a patron; but when the king's mind became disordered, and England was governed by a regency, the favor of the court was withdrawn, the order for paintings was withheld, and the doors of the palace shut upon him. During this period, availing himself of the general peace in Europe, in 1802, he visited Paris, where were then collected by the rapacity and taste of the First Consul, the choicest gems of art, taken from all the galleries of Europe. He was received with great honor by artists and by statesmen, as the President of the British Academy, and had several interviews with Bonaparte. Under these circumstances, it is not surprising that he ever looked upon his visit to France with pleasing recollections.

When the king recovered his health, West was at once reädmitted to favor, and an order was im-

mediately given for him to proceed with his paintings. His salary of one thousand pounds per annum was restored, and continued to be regularly paid until the final superannuation of the monarch, when it was stopped without the least previous intimation.

West was now between sixty and seventy years of age: he had received large sums for his paintings, but he had been a long time in executing them, and his necessary expenses for a house and painting-room and gallery were great. He found himself, in his old age, without a fortune, and thrown aside by the court. Without being at all daunted, however, he commenced a series of works, some of which proved to be among his very best. The first that he exhibited was "Christ healing the Sick," which he designed for the hospital in Philadelphia. When exhibited in London, it attracted crowds, and commanded such admiration that the British Institution offered him three thousand guineas for it. West accepted the offer "on condition that he should be allowed to make a copy with alterations." In the copy which he transmitted to Philadelphia, he not only made alterations, but added an additional group. It was exhibited by the trustees of the hospital, and the receipts, in the first year after its first arrival, are said to have been four thousand dollars. Among the other great works painted at this period, are the "Christ Rejected," and "Death on the Pale Horse." These are among his best known works in this country, and are remarkable for their grandeur and power.

In 1817, when he was seventy-nine years old, he was afflicted by the loss of his wife, who for

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more than fifty years had been his constant companion. He himself was feeling the pressure of old age, but still pursued his favorite occupation. He sat among his pictures; his hand had lost something of "its cunning," but still continued to sketch and to paint. At length, on the 11th of March, 1820, "without any fixed complaint, his mental faculties unimpaired, his cheerfulness uneclipsed, and with looks serene and benevolent, he expired, in the 82d year of his age. He was buried beside Reynolds, Opie, and Barry, in St. Paul's Cathedral. The pall was borne by noblemen, ambassadors, and academicians; his two sons and grandson were chief mourners, and sixty coaches brought up the splendid procession."

West was not above the middle height, of a very fair complexion, with a serene brow and a penetrating eye. He was patient, methodical, and extremely diligent. He left upwards of four hundred paintings and sketches in oil, many of them of a large size, besides more than two hundred original drawings in his portfolio. It was ascertained by calculation, that, to contain all his productions, "a gallery would be necessary four hundred feet long, fifty broad, and forty high." In so large a number of productions there must be great differences as to merit. If his genius was not of the highest kind, it was certainly very prolific, and sometimes seemed to surpass itself. Critics of high merit have pronounced him, "in his peculiar department, the most distinguished artist of the age in which he lived." "In his Death on the Pale Horse," painted when he was nearly 80, says Cunningham, "and more particularly in his sketch of that picture, he has more than ap-

proached the masters and princes of the calling. It is indeed irresistibly fearful to see the triumphant march of the terrific phantom, and the dissolution of all that earth is proud of, beneath his tread. War and peace, sorrow and joy, youth and age, all who love and all who hate, seem planet-struck. "The Death of Wolfe," too, is natural and noble; and the Indian Chief, like the Oneida Warrior of Campbell,

"A stoic of the woods, a man without a tear,"

was a happy thought. "The Battle of La Hogue," I have heard praised as *the best* historic picture of the British school, by one not likely to be mistaken, and who would not say what he did not feel." The gallery of West's pictures was sold after his death for upwards of twenty-five thousand pounds sterling.

One of the most admirable traits of this great painter was his pure moral character. This is exhibited in part by the subjects upon which he chose to exercise his pencil. They were subjects of high moral interest, — heroic deeds, — events of sacred history, — the triumphs of patriotism and virtue. In this choice he persisted, too, at a time when the general taste of the country was directed to subjects of a far inferior character.

Not the least pleasant circumstance to be mentioned in this sketch of Benjamin West, is the kind relation which always existed between him and his pupils, some of whom have been among the most distinguished of American artists. It was natural that a young painter who went from this country to England for instruction, or to seek his fortune, should desire the benefit of the vet-

eran's advice and counsel. These were never sought in vain. When Trumbull was arrested, during the war, by order of the British government, West immediately waited upon the king, and made known to his majesty his pupil's character and purposes, and received the assurance that, at all events, the personal safety of the prisoner should be fully attended to. When Gilbert Stuart was in London, a young painter, without resources, West not only afforded him direct pecuniary aid, but employed him in copying, and otherwise assisted him in his study of that branch of the art in which he afterwards excelled his master. A few weeks after Allston's arrival in England, he was introduced to Mr. West, and thus speaks of him in a letter: — "Mr. West, to whom I was soon introduced, received me with the greatest kindness. I shall never forget his benevolent smile when he took me by the hand; it is still fresh in my memory, linked with the last of like kind which accompanied the last shake of his hand, when I took a final leave of him in 1818. His gallery was open to me at all times, and his advice always ready and kindly given. He was a man overflowing with the milk of human kindness. If he had enemies, I doubt if he owed them to any other cause than his rare virtue; which, alas for human nature! is too often deemed cause sufficient."

With this genial testimony from one of the greatest and purest of our artists, himself so lately gone to his reward, we close our sketch of the earliest distinguished American painter, who, by assiduously cultivating the genius which Heaven conferred, did much to extend the reputation of his country, and to refine and bless mankind.

PETER HÖRBERG.

It is proper to state that the following sketch has been mainly derived from an article in a Swedish publication, translated by the Hon. GEORGE P. MARSH, of Burlington, Vermont.

IN the life of Benjamin West we have seen the power of genius, directing its possessor, under early adverse circumstances, to a profession to which no external advantages invited him. The life of the Swedish painter, whose name stands at the head of this article, is a still more remarkable example of the successful cultivation of a favorite art, with absolutely no facilities except those created by his own ingenuity. He was impelled, not by patronage or the wishes of friends, but by the taste and force of mind with which nature had endowed him. An ordinary adviser would have assured him, that he was meant for a humble laborer in the lowly sphere of rural life which his father filled; would have predicted for him the toil and penury of his ancestors; would certainly, whatever dreams of future prosperity he indulged, not have guessed, that without money, without the access to the higher scenes of a city life, which even a peasant may sometimes enjoy, without books, without models, without instruction, he would become one of the most celebrated artists of his country.

PETER HÖRBERG was born in the parish of Virestad, in Småland, Sweden, January 31, 1746. His parents were very poor, and their child so

weak and sickly that he could not walk till his third year. His father taught him to read when he was five years old, and before long, by means of a "copy," borrowed from a soldier, gave him some knowledge of writing. At nine years of age he was obliged to go out to service, and received, as compensation for a summer's labor, a pair of mittens and a violin, valued at twenty-four coppers. The violin was a source of much amusement during the winter which he spent at home. He strung it with horsehair, and made such progress in learning to play, that in the spring his father bought him another instrument with proper strings. For two summers more, he served the peasants as a shepherd-boy, watching the sheep and cattle as they browsed in the wild pastures of the country, according to the Swedish custom. His taste for painting began to manifest itself even as early as this. The Swedish almanacs and catechisms were ornamented with rude engravings; and, as his means would not allow him to own one of these books, he endeavored from memory to draw the figures on birch bark. He began also to ornament his father's cottage with carvings in soft wood and fir bark, among which was an imitation of the altar-piece of the parish church. In the exercise of the same vocation, he carved various figures for cane-heads, at the request of the neighboring peasants. His chief occupation, however, was in drawing and painting. He soon became dissatisfied with representing the mere figure, and endeavored to add color. Having never heard of mixing colors with oil, he discovered for himself a method of using some of the simpler kinds, such as ochre,

burnt clay, chalk, and charcoal, in a dry form, as is practised by crayon painters. He used planed boards for canvass; and, if fortune threw in his way a bit of writing paper, "he drew with a pen, using the juice of various berries to color and shade his drawings." While watching his flocks in the fields, he drew figures upon the smooth rocks, using fir bark for red chalk, and charcoal for black: with a sharp stick also he marked out figures upon the white funguses of the pastures.

Thus he advanced, struggling against poverty, which in his thirteenth year became so pressing, that his father was compelled to enrol him as a reserve recruit in the army, in order to obtain the bounty of a barrel of grain to save the family from starving. Upon this, mingled with chaff and cut straw, they contrived to live through the winter. In 1759, the famine became so severe, that Peter and his sister were sent out as mendicants, and actually begged their bread for a whole year. Early in 1760, Peter determined to apprentice himself to a painter; and, although his parents did not approve the resolution, they finally gave their consent. He accordingly, at the age of fourteen, set out for Wexiö, distant about thirty-five miles; this being the nearest place at which a master painter could be found. Every thing in this market town filled the young peasant with wonder. He was so much abashed as hardly to be able to answer a question. Fortunately for him, on the way from Virestad he had fallen in with a good-natured peasant who conducted him to the painter, whose name (we may almost despair of pronouncing it) was *Johan Christian Zschotzscher*. This man had already as many apprentices as he

needed; but, on allowing Hörberg to give a specimen of his talents with a piece of chalk upon a black board, and afterwards in drawing with colors on the backside of an oak board used to cut tobacco upon, he was so much astonished, especially on learning that he had received no instruction, that he promised to receive him into his service if he could get discharged from his enrolment. His master (that was to be) kept the figure of St. John the Evangelist, which the boy had painted upon the board, but allowed him to take a copy of it to carry home. To procure his discharge, it was necessary for his father to refund the bounty, which was something less than one dollar and three quarters of our money. The poverty of the family was such, that two years elapsed before this could be paid. At last, on the 13th of April, 1762, he was received as an apprentice for five years.

Having obtained leave to spend the Christmas holidays with his father, he took his colors with him, and painted "several pieces of a kind of hangings, called *bonad*, which the peasants in many parts of Sweden employ to decorate their apartments at Christmas. These are of linen, and the paintings are generally scenes from Scripture history, with explanatory inscriptions. For these paintings Peter received about half a dollar, and this was the first money he earned as a painter." "For half this sum," says he, "my mother bought me tow-cloth for an apron; and with the remainder, I purchased a lock for a little chest, which my father had made for me the preceding fall. I had no means of conveying my chest to Wexiö but by drawing it on a little sled,

which I did. The contents of the chest were my new apron and a pair of wooden shoes, which my father had also made for me."

He remained at Wexiö until the death of his master, about four years afterwards. The instruction which he received was very meagre; his principal employment was "laying on grounds and grinding colors." His only time for drawing was Sunday afternoon; and, what was worse than all, his master was incompetent to instruct him. By diligence and fidelity, he, however, so gained the good will of Zschotzscher, that, at his death, he bequeathed him about three dollars, on condition of his completing the unfinished work in the shop.

Having received the necessary testimonials from the magistrates at Wexiö, he went to Gottenburg to obtain license as a journeyman painter. His worldly wealth amounted to five dollars, and this was soon absorbed by official fees and his other expenses; so that when he started on his homeward journey, a distance of one hundred and ninety miles, he was one dollar and a half in debt, and had six coppers in his pocket! After travelling sixty miles, "he was obliged to sell, at half cost, his 'new red felt hat,' for which he had paid a dollar and a half at Wexiö." After reaching home, he immediately began to work, although at disadvantage, until he earned enough to pay his debt at Gottenburg, after which he entered the service of the painter Luthman, at Wexiö.

Within a year from this time, he obtained a license as district painter, which added somewhat to his emoluments, and, what was of more consequence, emancipated him from the control of

masters, giving him liberty to follow without restraint the free promptings of his imagination. Before a great while, "concluding," as he says, "that his days would pass more happily in the condition of matrimony," he married a young woman, whose circumstances were quite as humble as his own, and whose mind seems not to have been able to sympathize with that of her husband. So entirely poor were they, that "they had not even a pot, or a wood axe, but managed to make shift by borrowing: however, after they had lived together a year and a half, their prosperity increased to that degree, that they were able to purchase that necessary utensil, an iron pot, and now thought themselves independent." In all this poverty, the gentle and noble character of the man seems never to have given way under accumulated trials. He "endured hardness as a good soldier," maintained ever a cheerful spirit, and, without murmuring, pursued with earnestness the art which few appreciated, but which was to him so dear.

His establishment, as district painter, did not bring him an income sufficient for his support. No one in the community about him was competent to judge of his merits, and he found that he must depend on something besides his pencil for a support. "He not only made his own furniture, but made tables, boxes, sledges, and even wooden shoes, for other peasants in the neighborhood." After a while he took a farm, which he subsequently exchanged for one larger, and again for another still larger, upon which he employed a laborer, who relieved him from the heavier tasks.

He, however, employed his pencil as opportunity offered. In 1783, a clergyman from Kudby, happening to enter his hut, saw some of his productions, and proposed to him to copy "some portraits of the Gustavian royal family." Kudby was about half-way to Stockholm, a city which Hörberg was extremely anxious to visit; and, with the hope of gratifying his wishes in this respect also, he accepted the invitation. His wife and relatives endeavored to deter him from this expedition; but his mind was fixed, and, in spite of their opposition, he started with about a dollar and a half for his travelling expenses, and two compositions from the life of the Saviour, which he intended to exhibit at Stockholm. On arriving at Kudby, after a journey of four or five days, he found, to his disappointment, that the clergyman had changed his mind; and he received for his pains the liberal reward of a supply of cold provisions! His small stock of money was half exhausted; but he still adhered to his purpose of going to Stockholm, and, after resting a day or two, again started, and, on the tenth day from leaving home, reached that city, "weary, with blistered feet, his knapsack upon his back, and his roll of pictures under his arm."

After various adventures for a few days, he obtained lodgings with a "drunken countryman from Smäland, named Meierström." He also succeeded in making himself known to Professor Pilo, director of the Swedish Academy of Art, who expressed himself greatly amazed when he saw Hörberg's pictures, and learned how little instruction he had received. He was permitted to draw from the casts of the academy, and made his first

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attempt from that of the Laocoön. Pilo came to him, after a few hours, praised his drawings, and inquired into his wants and objects. "There is nothing in the world," said he to the Director, "that I desire so much as to remain for some time at Stockholm; but I see no possibility of remaining here a week, for I have scarcely half a dollar;" "for I was ashamed," he says in his biography, "to tell the plain truth, that I had not even a dozen coppers."

In Stockholm, Hörberg remained eight weeks, learning the technicalities of his art, extending his acquaintance, and becoming himself known to his fellow-artists. He had a desire to visit Italy; and Sergell, the first Swedish sculptor of his time, proposed to Gustavus III., the reigning monarch, who was about to visit Rome, to allow Hörberg to accompany him. This request was refused by the king, whose discernment was not sufficient to perceive the real merit that lay concealed under the rude but modest exterior of the peasant. Sergell, however, generously bestowed upon him his salary as professor, during the time he was absent with the king in Italy: it amounted, however, to less than ten dollars, a sum which would seem to indicate the small esteem in which the arts were held, or the extremely few wants or modest pretensions of the first artists of the time. Hörberg was, however, presented to his majesty, whose generosity and condescension went so far, as to bestow upon the poor painter a ticket of admission to a dramatic exhibition. "This," says the painter, "was kind, and the ticket was a more exalted favor than I then understood; but I was so informed, after my return to Stockholm."

The presentation had taken place at the palace of Drotthingholm.

After a residence of eight weeks at the capital, where the favors he received, though small, were beyond his expectations, he prepared to return home, having greatly increased his stock of drawings, and with about four dollars in his pocket. "While I reviewed in memory my adventures there" [Stockholm], he says in his autobiography, "my eyes were dimmed with tears of joy, and then I thought upon my home, and my forsaken family, whom I hoped to rejoin in a few days."

He visited the capital again in the following year, and spent several months drawing in the academy, and "executing pictures from his own designs." "One of these, representing Zaleucus submitting to the loss of an eye to save one of the eyes of his son, was exhibited at the academy, and was afterwards bought by the brother of the king for five dollars. The academy also awarded him the third silver medal for drawing from the living model." He now became more known, and his professional engagements proportionally increased. He was free from debt, although still comparatively poor.

In 1787, he again went to Stockholm, and remained from January to September. During this time he received from the academy their second silver medal, and became a candidate for the large gold medal. This he did not obtain, although several of the members, and among them his friend Sergell, thought he deserved it. The picture which he painted on this occasion was sold for twenty dollars, a larger sum than he had thus far received for any of his works.

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At the invitation of Baron de Geer, the Royal Chamberlain, Hörberg, after returning from Stockholm, from this which proved to be his last visit, went to Finspäng. This residence of the Baron was a great resort of artists, who enjoyed without restraint the liberal hospitality of their host. For several years, Hörberg spent much time there, and executed some of his best works. The elegant society which he there enjoyed, was very grateful to his tastes, and contributed, even at that comparatively late period of his life, to his refinement and intellectual cultivation. By the advice of the Baron, he removed from Smäland to Ostergöthland, a distance of nearly two hundred miles from his early home at Virestad, and bought a small farm for about two hundred dollars. His circumstances remained very humble. "He speaks with profound thankfulness of a present which he received from the Countess Aurora de Geer, consisting of two kettles, a frying pan, six pewter plates, a few earthen pots, a yoke of oxen, a milch cow, and four sheep." "Hörberg's countryman, the poet Atterbom, observes, 'that this was rather aiding his wife, than benefiting him.'" He was enabled, however, to live in frugal independence, and in the constant exercise of his art. To be sure, he received less than he might have obtained in the exercise of any of the common mechanic trades; but such was his attachment to his art, that he never used it as a simple method of getting money. It was to him in itself an object far higher and better than wealth. He painted much for persons in his own condition, who were proud that a poor peasant could rise to so much distinction as an artist.

There was, too, in his works a native grandeur, which even the uninstructed of his countrymen could understand.

In the year 1800, he made his last journey to his native parish of Virestad, and painted an altar-piece for the parish church. His fortune increased enough, sometime before his death, to enable him to purchase another small farm; so that, in the latter part of his life, he gave to each of his sons a small parcel of land, reserving only an annual rent for his own support. He received also, in 1812, a pension of about forty dollars from the then reigning monarch of Sweden. It is to be regretted that the last years of his life, although in the main placid and beautiful, were somewhat disturbed by the unsympathizing complaints of some of his family, who, unable to appreciate the high objects of his art, did not withhold their reproaches when he could no longer command his usual income. He was thus driven to pass much of his time in solitude, for the better enjoyment of which, he had built for himself a studio, on a rocky eminence, near his dwelling, where he worked, or, when not at work, would walk backwards and forwards by the hour together. Towards the last, his physical powers gradually failed, till, on the 24th of January, 1816, he quietly departed this life, at the age of 70 years.

Notwithstanding the unfavorable circumstances in which he was placed, his diligence enabled him to produce a vast number of works. His largest works were his altar-pieces; and, of these, one was thirty feet long by twenty high. Of these he painted eighty-seven. Between 1764 and 1807, he produced, besides altar-pieces, five hundred and

twenty paintings. Of his works after this latter date, no list is preserved; but the number must have been considerable. The number of his drawings was much greater than that of his paintings. He mentions himself, — "1. The history of Jesus Christ, in a volume consisting of two hundred and ninety-one designs. 2. A collection of several thousand drawings from gems and other antiques. 3. Till Eulenspiegel's history of Christ, for Baron de Geer. 4. Traditions concerning Jesus of Nazareth, or the fabulous history of Christ, three hundred and forty-seven designs, of the size of playing-cards." His mechanical ingenuity was also very great, and led him occasionally to pursuits somewhat diverse from painting. "With few and simple implements, he executed the most ingenious works, and with a common knife he carved in wood various objects of sculpture, by no means destitute of artistical merit. He not only carved statues in wood, but modelled them in clay, and then burnt them in a brick-kiln. Besides cabinet work, he occupied himself occasionally for many years in making violins; and as he felt an irresistible impulse to investigate the movements of the heavenly bodies, and acquire some knowledge of astronomy, he made instruments of wood for his observations, and omitted no opportunity to extend his astronomical knowledge, by conversation or study of such works on that science as fell in his way."

Thus was he ever grasping for knowledge; and what he learned, he in some sort systematized, so that his mind was not a repository of barren facts, but became, by his attainments, harmoniously developed. He was a great lover of music,

and composed some pieces said to be characterized by originality and deep feeling. He was fond of poetry, and tried his hand at composition. He left in manuscript "various literary sketches and collections." One volume, consisting of extracts, "upon the early history and mythology of the northern kingdoms," "contains many drawings and observations upon the manner in which the modern artists ought to treat subjects drawn from the mythology and mythical history of the North." His most interesting literary work is his autobiography, composed in a style so open, so simple and unaffected, as to make it extremely interesting, and of much value as a contribution to Swedish literature. He speaks without reserve, and yet with delicacy, of his poverty and trials, makes no boasts of his fortitude, and exhibits no discontent nor fretfulness; but everywhere, by a manly and cheerful temper, shows how thoroughly he appreciates the true and highest purposes of art, and with how few external advantages he is contented to live, provided the aspirations of his spirit are satisfied. He did not endeavor to rise above the social rank in which he was born, and educated his sons with reference to their condition, as peasants. His honor he derived not from station, but from character.

His person corresponded to his traits of character. "He was strongly built," says the poet Atterbom, "rather low of stature, of a firm and manly carriage, unconstrained and dignified in manner, with a lofty forehead, a clear and gentle eye, a mouth delicately but firmly chiselled, flowing silver locks beneath his velvet cap, and neatly but simply clad in the style of the better class of

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peasants. It was thus that I saw him in the summer of 1809, when I came to Fälla, early one Sunday morning, with my brother-in-law, who was to preach to a congregation of miners in the open air. Hörberg came a considerable distance on foot to meet my brother-in-law, of whose society he was fond. We sent our carriage before us, and walked with Hörberg, by a romantic forest-path, to the city; the heavens were blue and warm, the birds were caroling, and the old painter was as joyous as they." He had true ideas of his art. Of the painters at Stockholm, he said on one occasion (though without the last spirit of detraction), "There were many who painted better, much better, than he; but *they had no ideas, no grand conceptions.*"

As an artist, Hörberg attempted great things; and if he did not place himself side by side with the immortal painters of Italy, it was not so much because he lacked the genius, as because he had not the cultivation which they were blessed with. "He became," says the Swedish poet, from whom we have already quoted, "but a fragment of what he might have been, a melancholy but splendid ruin of a structure, which nature had designed to rear in the grandest proportions." Imperfect, indeed, in some branches of his beautiful art, his genius was so true, so grand, so poetic and elevated, his invention so rich, his conception so original, and his life so humble and pure, that the name of the peasant-painter may well be mentioned as among those most worthy of a grateful remembrance in the later annals of Sweden.

ALEXANDER WILSON.

Alexander Wilson, the Ornithologist, was born in Paisley, Scotland, about the year 1766. He was early apprenticed to a weaver, but, while in this employment, manifested a strong desire for learning, and spent his leisure hours in reading and writing. After being released from this occupation, he, for a time, became a pedler, and, with a pack on his back, wandered among the beautiful valleys and over the mountains of Scotland. Seldom has one of that acute and insinuating craft thought so little of trafficking as he did. His feelings were those of joy and almost rapture at the beauties of nature, and the entire freedom with which he could enjoy them. "These are pleasures," he says with enthusiasm, "which the grovelling sons of interest, and the grubs of this world, know as little of, as the miserable spirits, doomed to everlasting darkness, know of the glorious regions and eternal delights of Paradise." Here was a pedler indeed! This wandering life cultivated those tastes which were afterward so strongly and so happily developed in this country. He became dissatisfied with trading, in proportion as he became in love with nature; and, although he still pursued his business to obtain a livelihood, he indulged his taste for poetry, and contributed several essays to various periodical publications. In a debating society with which he became connected, he gained considerable applause by poetical discourses. Subsequently he collected his

verses and published them, with the hope of receiving some pecuniary advantage. The poems went through two small editions, but the author gained no benefit from the publication. In 1792, he published another story in verse, entitled Watty and Meg, which, being printed anonymously, was at first ascribed to Burns, and has ever retained its popularity in Scotland, as among the best productions of the Scottish muse.

About the same time occurred a circumstance which probably hastened his emigration to America. He published a severe satire upon one of the wealthy manufacturers, who had rendered himself obnoxious by certain unpopular acts. The satire was not so much relished by the subject of it as by the workmen. Legal measures were resorted to. The author was discovered and prosecuted for a libel, and "sentenced to a short imprisonment, and to burn, with his own hands, the piece, at the public cross in the town of Paisley." It is said that the poet, in whose mind was no vindictiveness of spirit, did not think of his satire, in after life, with feelings of satisfaction.

Before he left Paisley, indeed, his generous feelings got the mastery of all other; and he asked the forgiveness of some who had felt the bitterness of his pen, for any uneasiness which he had caused them. Sometime afterward, his brother David came to America, and brought with him a collection of these pieces; but Alexander no sooner took them into his hands, than he threw them into the fire. "These," said he, "were the sins of my youth; and if I had taken my good old father's advice, they would never have seen the light."

Not long after the events thus referred to, he

determined to come to America, and, by great industry and economy, at last gained sufficient funds to accomplish his purpose. A ship was to sail from Belfast, in Ireland. He left Paisley on foot, and at Port Patrick took passage for Belfast. On his arrival he found the ship full. Undaunted, however, and determined not to return to Scotland, he consented to sleep upon deck, and accordingly embarked in the ship *Swift*, of New York, bound to Philadelphia, and landed at Newcastle, Delaware, July 14, 1794, in the 28th year of his age. He had but a few shillings in his pocket, but he was buoyant with hope; he had actually set foot upon the new world, and shouldering his fowling-piece, he directed his steps towards Philadelphia, distant about thirty-three miles. On his way, he shot a red-headed woodpecker, which he thought "the most beautiful bird he had ever beheld."

For some time after his arrival in America, he seems to have doubted to what employment he should devote himself. We find him within a year engaged as a copper-plate printer; then as a weaver; then moving to Shepherdstown, Virginia, and soon returning to Pennsylvania; then travelling in New Jersey, as a pedler; then opening a school, near Frankford, Pennsylvania; and soon removing to Milestown, where he remained for several years, both teaching and making himself master of those branches of learning with which he was not before acquainted.

After several other changes, Wilson at last found himself situated in a school, on the banks of the Schuylkill, within four miles of Philadel-

phia, and near the botanical garden of the philosopher and naturalist, William Bartram.

This was the beginning of a new life to the future ornithologist. He formed an acquaintance with Mr. Bartram, which soon ripened into a permanent friendship. Wilson had always been observant of the manners of birds, but had never studied them as a naturalist. Mr. Bartram lent him the works of Catesby and Edwards on natural history, from which he derived much instruction, even while his own knowledge enabled him to correct many of their errors. Notwithstanding his progress in information, and his general prosperity, he was subject at times to great despondency. His sensitive mind could not bear the prospect of a life of penury and dependence; to which, as the teacher of a country school, he seemed destined.

During some of these periods of depression, Mr. Lawson, an acquaintance of Mr. Bartram, and afterward the principal engraver of the plates for the Ornithology, suggested to Wilson the employment of drawing. He consented, but succeeded so poorly in attempting to copy the human figure, that he threw his work aside in despair. At the suggestion of Mr. Bartram, he then tried his hand on flowers, and felt somewhat encouraged. Colors were obtained, and he painted from nature a bird which he had shot. His success aroused all his energies: he was evidently approaching the true objects of his life, those which his tastes fitted him for, and to which his powers were adapted.

In the mean time, as he improved in drawing, he advanced in a knowledge of ornithology; nor

was it long before the thought suggested itself that it would not be an unworthy employment to make known to others the beauties and wonders of his favorite science.

He accordingly asked the advice of Mr. Bartram, who, while he acknowledged the abilities of Wilson, suggested also the difficulties attendant upon the undertaking. The future ornithologist was not, however, deterred by them; his ingenuity was ready with an answer to all objections, or his enthusiasm disregarded them. Under date of March 12, 1804, he thus writes to his friend Lawson: "I dare say you begin to think me very ungenerous and unfriendly in not seeing you for so long a time. I will simply state the cause, and I know you will excuse me. Six days in one week I have no more time than just to swallow my meals, and return to my *sanctum sanctorum*. Five days of the following week are occupied in the same routine of pedagoguing matters; and the other two are sacrificed to that itch for drawing which I caught from your honorable self. I never was more wishful to spend an afternoon with you. In three weeks I shall have a few days' vacancy, and mean to be in town chief part of the time. I am most earnestly bent on pursuing my plan of making a collection of all the birds in this part of North America. Now I don't want you to throw cold water, as Shakspeare says, on this notion, Quixotic as it may appear. I have been so long accustomed to the building of airy castles and brain wind-mills, that it has become one of my earthly comforts — a sort of rough bone, that amuses me when sated with the dull drudgery of life."

In the latter part of this year, he undertook a pedestrian journey to the Niagara Falls, in company with two friends. Winter came upon them on their return, in Genessee county; one of his companions stopped with some friends, and the other sought a pleasanter mode of travelling. Wilson persevered, and, after fifty-seven days' absence, reached home the 7th of December, having walked more than twelve hundred miles. "The last day he walked forty-seven miles." One result of this excursion was a poem, entitled *The Foresters*, which was published in the *Portfolio*.

The toils of the journey only increased his ardor to undertake some more extensive expedition. He was in love with the woods, and the wild pleasures of a forester's life. His constitution was hardy; he had no family to bind him to one spot, and his whole circumstances tended to encourage his predominant taste. But, while thus forming large plans, his means for accomplishing them remained very small. "The sum total of his funds amounted to *seventy-five cents*." He continued, however, to make drawings of birds, which he submitted to Mr. Bartram's criticism. He also began to try his hand upon the corresponding art of etching, since it was certain that the plates in his projected Ornithology must be either etched or engraved. Mr. Lawson furnished him with materials, and with customary enthusiasm the new artist applied his varnish, and commenced the operation. "The next day after Mr. Wilson had parted from his preceptor, the latter, to use his own words, was surprised to behold him *bouncing* into his room, crying out, '*I have finished my plate! Let us bite it in with the aqua-*

fortis at once, for I must have a proof before I leave town.' Lawson burst into laughter at the ludicrous appearance of his friend, animated with impetuous zeal; and, to humor him, granted his request. The proof was taken, but fell far short of Mr. Wilson's expectations, or of his ideas of correctness."

His succeeding attempts at etching did not prove very satisfactory to himself; and they convinced him, besides, that to meet the demands of his taste, the plates must be finished by the engraver. He then endeavored to induce Mr. Lawson to undertake the work jointly with himself; a proposition which that artist thought best to decline. Wilson did not falter in his purpose, on account of these disappointments, but declared his determination to persist in the publication, even if it cost him his life. "I shall at least," he said, "leave a small beacon to point out where I perished."

About the beginning of the year 1806, the hopes of our ornithologist were greatly raised by the public announcement that it was the purpose of the President of the United States to despatch a company of men for exploring the waters of Louisiana. Mr. Wilson was inspired with the thought that here he might have an opportunity, long ardently desired, of visiting those regions, and making the necessary researches for his Ornithology. He accordingly made an application to Mr. Jefferson, stating his purpose, and offering his services. The whole was enclosed in an introductory letter from Mr. Bartram. The application was unsuccessful: Mr. Jefferson did not make any reply at all. The wishes of the orni-

thologist were, however, nearer their gratification than he supposed.

Mr. S. F. Bradford, of Philadelphia, whose name deserves honorable mention, being about to publish an edition of Rees's Cyclopedia, engaged Wilson, on the recommendation of some of his friends, as assistant editor, offering him a liberal salary. It was not long before he also engaged to publish the Ornithology. It was a happy day for the frequently baffled, but not disheartened naturalist, when the bargain was made, and his friend Lawson secured as the engraver.

In September, 1808, he published the first volume of the *American Ornithology.* Notwithstanding the previous announcement, it was received by the public with great surprise and unqualified delight. It was considered a national honor, that a scientific work, so splendid in the style of its illustrations, could be produced in so young a country. Mr. Wilson immediately started with the volume in his hand to obtain subscribers in the Northern and Eastern States; at same time he constantly kept his eye open to gain all possible information for the continuation of the work. "I am fixing my correspondents," he writes in a letter from Boston, "in every corner of these northern regions, like so many pickets and outposts, so that scarcely a *wren* or *tit* shall be able to pass along, from York to Canada, but I shall get intelligence of it."

During this journey, Wilson received many compliments and some subscriptions. He was also subjected to some mortifying disappointments. Some from whom he expected at least sympathy and encouragement, looked at his volume with

indifference, or returned it to him with a cold compliment. The Governor of New York, he says, "turned over a few pages, looked at a picture or two; asked me my price; and, while in act of closing the book, added, 'I would not give a hundred dollars for all the birds you intend to describe, even had I them alive.' Occurrences such as these distress me, but I shall not lack ardor in my efforts." In another place he gives an amusing account of a rebuff which he received from a public functionary in Pennsylvania. "In Hanover, Penn., a certain Judge H. took upon himself to say, that such a book as mine ought not to be encouraged, as it was not within the reach of the commonality, and, therefore, inconsistent with our republican institutions! By the same mode of reasoning, which I did not dispute, I undertook to prove him a greater culprit than myself, in erecting a large, elegant, three-story brick house, so much beyond the reach of the *commonality*, as he called them, and, consequently, grossly contrary to our republican institutions. I harangued this Solomon of the Bench more seriously afterwards; pointing out to him the great influence of science on a young nation like ours, and particularly the science of natural history, till he began to show such symptoms of *intellect* as to seem ashamed of what he had said." — After his return from the North, having remained but a few days at home, he started on a tour to the South, visiting, in the course of it, every city and town of importance as far as Savannah, in Georgia. Of the first volume but two hundred copies had been printed; and, although the list of subscribers was not very much enlarged, the publisher was encour-

raged to strike off a new edition of three hundred more. The second volume was published in 1810, and the adventurous ornithologist almost immediately set out for New Orleans, by way of Pittsburg. He descended the Ohio alone in a skiff, as far as Louisville, upwards of seven hundred miles. Here he sold his frail bark; and, having walked to Lexington, seventy miles farther, he purchased a horse, and, without a companion or a guide, made his way through the wilderness to Natchez, a distance of six hundred and seventy-eight miles. Some of the particulars of this journey, taken from a letter of the ornithologist, dated at Natchez, May 28, 1811, will give the best idea of his courage, enterprise, and general character.

"I was advised by many not to attempt this journey alone; that the Indians were dangerous, the swamps and rivers almost impassable without assistance; and a thousand other hobgoblins were conjured up to dissuade me from going *alone*. But I weighed all these matters in my mind; and, attributing a great deal of this to vulgar fears and exaggerated reports, I equipped myself for the attempt. I rode an excellent horse, on whom I could depend; I had a loaded pistol in each pocket, a loaded musket belted across my shoulder, a pound of gunpowder in my flask, and five pounds of shot in my belt. I bought some biscuit and dried beef, and on Friday morning, May 4th, I left Nashville. * * * Eleven miles from Nashville, I came to the Great Harpath, a stream of about fifty yards, which was running with great violence. I could not discover the entrance of the ford, owing to the rain and inundations. There was no time to be lost. I plunged in, and

almost immediately my horse was swimming. I set his head aslant the current; and, being strong, he soon landed me on the other side. * * * Next day, the road winded along the high ridges of mountains that divide the waters of the Cumberland from those of the Tennessee. I passed a few houses to-day; but met several parties of boatmen returning from Natchez and New Orleans, who gave me such an account of the road, and the difficulties they had met with, as served to stiffen my resolution to be prepared for every thing. These men were as dirty as Hottentots; their dress, a shirt and trousers of canvass, black, greasy, and sometimes in tatters; the skin burnt wherever exposed to the sun; each with a budget wrapped up in an old blanket; their beards, eighteen days old, added to the singularity of their appearance, which was altogether savage. These people came from the various tributary streams of the Ohio, hired at forty or fifty dollars a trip, to return back on their own expense. Some had upwards of eight hundred miles to travel." "On Monday, I rode fifteen miles, and stopped at an Indian's to feed my horse. * * * I met to-day two officers of the United States army, who gave me a more intelligent account of the road than I had received. I passed through many bad swamps to-day; and, about five in the evening, came to the banks of the Tennessee, which was swelled by the rain, and is about half a mile wide, thirty miles below the muscle shoals, and just below a long island laid down in your small map. A growth of canes, of twenty or thirty feet high, covers the low bottoms; and these cane swamps are the gloomiest and most desolate-looking places

imaginable. I hailed for the boat as long as it was light, without effect; I then sought out a place to encamp, kindled a large fire, stript the canes for my horse, ate a bit of supper, and lay down to sleep; listening to the owls and the *Chuck-wills-widow*, a kind of *Whip-poor-will*, that is very numerous here. I got up several times during the night, to recruit my fire, and see how my horse did; and, but for the gnats, would have slept tolerably well. These gigantic woods have a singular effect by the light of a large fire; the whole scene being circumscribed by impenetrable darkness, except that in front, where every leaf is strongly defined and deeply shaded. In the morning I hunted until about six, when I again renewed my shoutings for the boat, and it was not until near eleven that it made its appearance. * * * The country now assumed a new appearance; no brush wood — no fallen or rotten timber: one could see a mile through the woods, which were covered with high grass fit for mowing. These woods are burnt every spring, and thus are kept so remarkably clean that they look like the most elegant noblemen's parks. A profusion of flowers, altogether new to me, and some of them very elegant, presented themselves to my view as I rode along. This must be a heavenly place for the botanist. The most noticeable of these flowers was a kind of Sweet William, of all tints, from white to the deepest crimson; a superb thistle, the most beautiful I had ever seen; a species of Passion-flower, very beautiful; a stately plant of the sunflower family — the button of the deepest orange, and the radiating petals bright carmine, the breadth of the flower about

four inches; a large white flower like a deer's tail. Great quantities of the sensitive plant, that shrunk instantly on being touched, covered the ground in some places. * * * I met six parties of boatmen to-day, and many straggling Indians, and encamped about sunset near a small brook, where I shot a turkey, and, on returning to my fire, found four boatmen, who stayed with me all night, and helped to pick the bones of the turkey. In the morning I heard them gabbling all round me; but not wishing to leave my horse, having no great faith in my guests' honesty, I proceeded on my journey. This day I passed through the most horrid swamps I had ever seen. They are covered with a prodigious growth of canes and high woods, which together shut out almost the whole light of day for miles. The banks of the deep and sluggish creeks that occupy the centre are precipitous, where I had often to plunge my horse seven feet down, into a bed of deep clay up to his belly, from which nothing but great strength and exertion could have rescued him; the opposite shore was equally bad, and beggars all description. For an extent of several miles, on both sides of these creeks, the darkness of night obscures every object around. * * * About half an hour before sunset, being within sight of the Indian's, where I intended to lodge, the evening being perfectly calm and clear, I laid the reins on my horse's neck, to listen to a mocking-bird, the first I had heard in the Western country, which, perched on the top of a dead tree before the door, was pouring out a torrent of melody. I think I never heard so excellent a performer. I had alighted and was fastening my horse, when,

hearing the report of a rifle immediately beside me, I looked up, and saw the poor mocking-bird fluttering to the ground; one of the savages had marked his elevation, and barbarously shot him. I hastened over into the yard, and, walking up to him, told him that was bad, very bad! — *that this poor bird had come from a far distant country to sing to him*, and that in return he had cruelly killed him. I told him the Great Spirit was offended at such cruelty, and that he would lose many a deer for doing so. * * * * * *

"On the Wednesday following, I was assailed by a tremendous storm of rain, wind, and lightning, until I and my horse were both blinded with the deluge, and unable to go on. I sought the first most open place, and dismounting stood for half an hour under the most profuse heavenly shower-bath I ever enjoyed. The roaring of the storm was terrible; several trees around me were broken off and torn up by the roots, and those that stood were bent almost to the ground; limbs of trees of several hundred weight flew past within a few yards of me, and I was astonished how I escaped. I would rather take my chance in a field of battle, than in such a tornado again.

"On the 14th day of my journey, at noon, I arrived at this place, having overcome every obstacle, alone, and without being acquainted with the country; and, what surprised the boatmen more, *without whiskey.* * * * The best view of the place and surrounding scenery is from the old Spanish fort, on the south side of the town, about a quarter of a mile distant. From this high point, looking up the river, Natchez lies on your right, a mingled group of green trees and white

and red houses, occupying an uneven plain, much washed into ravines, rising as it recedes from the bluff, a high precipitous bank of the river. * * On your left you look down, at a depth of two or three hundred feet, on the river winding majestically to the south. This part of the river and shore is the general rendezvous of all the arks or Kentucky boats, several hundreds of which are at present lying moored there, loaded with the produce of the thousand shores of this noble river. The busy multitudes below present a perpetually varying picture of industry; and the noise and uproar, softened by the distance, with the continual crowing of the poultry with which many of these arks are filled, produce cheerful and exhilarating ideas. The majestic Mississippi, swelled by his ten thousand tributary streams, of a pale brown color, half a mile wide, and spotted with trunks of trees, that show the different threads of the current and its numerous eddies, bears his depth of water past in silent grandeur. Seven gunboats, anchored at equal distances along the stream, with their ensigns displayed, add to the effect. * * * The whole country beyond the Mississippi, from south round to west and north, presents to the eye one universal level ocean of forest, bounded only by the horizon. So perfect is this vast level, that not a leaf seems to rise above the plain, as if shorn by the hand of heaven. At this moment, while I write, a terrific thunder-storm, with all its towering assemblage of black, alpine clouds, discharging living lightning in every direction, overhangs this vast level, and gives a magnificence and sublime effect to the whole."

From Natchez our traveller continued his journey to New Orleans, and, as the sickly season was approaching, soon took passage in a ship bound to New York, where he arrived on the thirtieth of July, having considerably enlarged his stock of materials, and gained some new subscribers.

In September, 1812, Mr. Wilson started to visit his subscribers at the East. At Haverhill, N. H., he was the subject of a ludicrous mistake. The inhabitants, "perceiving among them a stranger of very inquisitive habits, and who evinced great zeal in exploring the country, sagaciously concluded that he was a spy from Canada, employed in taking sketches of the place to facilitate the invasion of the enemy. Under these impressions it was thought conducive to the public safety that Mr. Wilson should be apprehended; and he was accordingly taken into the custody of a magistrate, who, on being made acquainted with his character and the nature of his visit, politely dismissed him, with many apologies for the mistake."

During the remainder of this year and the first half of 1813, he proceeded in his work with great assiduity. The difficulties he had to contend with were numerous and harassing. The greatest of them was his poverty. He labored "without patron, fortune, or recompense." His only resource, now that his duties as assistant editor of the Cyclopedia were finished, was the coloring of the plates. This was a delicate task, which he entrusted to others with hesitation, and generally only to be disappointed with the result. When his friends urged him to refrain from his exhausting labors, he would reply that "life is

short, and without exertion nothing can be performed."

The seventh volume of the Ornithology was published in the early part of 1813, and he immediately made preparations for the succeeding volume, the letterpress of which was completed in August. He was not permitted to see it published. After an illness of but few days' duration, a disease which might, in his ordinary vigor, have been thrown off, terminated his life on the 23d of August, in the forty-seventh year of his age.

He had often expressed the wish, that, at his decease, he might be buried *where the birds might sing over his grave;* but those who were with him at the last, were unacquainted with this desire, and his remains were laid to rest in the cemetery of the Swedish church, in Southwark, Philadelphia.

In his person, Wilson was tall, slender, and handsome; his eye was intelligent, and his countenance expressive of a consciousness of intellectual resources above those of most with whom he associated. His conversation and his letters were remarkable for liveliness, force, and originality. Although much attached to his new home on this side of the Atlantic, he never forgot the friends whom he had left on the other. In a letter to his father, written after the publication of the first volume of the Ornithology, he says: "I would willingly give a hundred dollars to spend a few days with you all in Paisley; but, like a true bird of passage, I would again wing my way across the western waste of waters, to the peaceful and happy regions of America. * * *

Let me know, my dear father, how you live and how you enjoy your health at your advanced age. I trust the publication I have now commenced, and which has procured for me reputation and respect, will also enable me to contribute to your independence and comfort, in return for what I owe you. To my step-mother, sisters, brothers, and friends, I beg to be remembered affectionately."

The work which he produced is a great honor to the country (an honor frequently acknowledged by distinguished foreigners); and although it yields to the still more splendid production of Audubon, yet time will enhance, not detract from, the honor due to so zealous, persevering, and industrious a naturalist. His descriptions we value, not only for their accuracy, but for the fine poetic sensibility which they so often display. "We need no other evidence of his unparalled industry, than the fact, that of *two hundred and seventy-eight* species which have been figured and described in his Ornithology, *fifty-six* of these have not been noticed by any former naturalist; and several of the latter number are so extremely rare, that the specimens from which the figures were taken, were the only ones that he was ever enabled to obtain."

The most prominent trait of Wilson was his general sympathy with nature. Every rock, every tree, every flower, every rivulet, had a voice for him. No little bird sung which did not sing for his pleasure, or to tell him some story. Though obliged by his art to take the life of many a beautiful warbler, he never did so for the sake of a cruel sport. His "victims" were after all

his "friends," for whom he never ceased to plead, and whom he always commended to the kind care of the farmer. The nimble woodpecker he asserted to be a fellow-worker with man, destroying only the vermin which would otherwise injure the trees and the gardens. He defended the cat-bird against the prejudices of men and boys; for which prejudices, he says, he never heard any reason but that *they hated cat-birds*, just as some men say they hate Frenchmen. Even if king-birds did destroy bees, it was not with him a good argument for their extermination. "In favor of the orchard oriole," says a very pleasant biographer, "he shows, that, while he destroys insects without number, he never injures the fruit; he has seen instances in which the entrance to his nest was half closed up with clusters of apples; but so far from being tempted with the luxury, he passed them always with gentleness and caution. He enters into a deliberate calculation of the exact value of the red-winged blackbird, which certainly bears no good reputation on the farm; showing, that allowing a single bird fifty insects in a day, which would be short allowance, a single pair would consume twelve thousand in four months; and if there are a million pairs of these birds in the United States, the amount of insects is less by twelve thousand millions, than if the red-wing were exterminated." Sometimes he took upon himself to be the avenger of the wrongs of his feathered friends. "On one occasion," says the same writer, "a wood thrush, to whose delightful melody he had often listened till night began to darken and the fire-flies to sparkle in the woods, was suddenly missing, and its murder was traced

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to the hawk, by the broken feathers and fragments of the wing; he declares that he solemnly resolved, the next time he met with a hawk, to send it to the shades, and thus discharge the duty assigned to the avenger of blood."

Towards all animals he was sincerely humane. A beautiful little incident, which he relates, will illustrate this: — "One of my boys caught a mouse in school a few days ago, and directly marched up to me with his prisoner. I set about drawing it that same evening; and, all the while, the pantings of its little heart showed that it was in the most extreme agonies of fear. I had intended to kill it in order to fix it in the claws of a stuffed owl; but happening to spill a few drops of water where it was tied, it lapped it up with such eagerness, and looked up in my face with such an expression of supplicating terror, as perfectly overcame me. I immediately untied it, and restored it to life and liberty. The agonies of a prisoner at the stake, while the fire and instruments of torture are preparing, could not be more severe than the sufferings of that poor mouse; and, insignificant as the object was, I felt at that moment the sweet sensation that mercy leaves on the mind, when she triumphs over cruelty."

As might be supposed, Wilson was a shrewd observer, and independent in his opinions. He had no faith in the stories of birds being fascinated by snakes, and utterly ridiculed the assertions of some naturalists, that swallows spend the winter torpid in the trunks of old trees, or in the mud with eels at the bottom of ponds.

An admirable trait of his character was a love of justice and truth. In his dealings with others,

he was honorable and generous. Extremely temperate in eating and drinking, he was able to endure the necessary fatigues and privations attendant on his wandering life, without sinking under them, or contracting dangerous diseases. His fault was an irritability of temper; but this we can pardon when counterbalanced by so many virtues, while from his life we may draw an encouraging lesson of what may be accomplished by perseverance, industry, and self-reliance.

ROBERT BLOOMFIELD.

Robert Bloomfield, the author of the "Farmer's Boy," was born in 1766, at a small village in Suffolk, England. His father died before Robert was a year old. His mother was left with the charge of five other children. In these circumstances, in order to obtain a maintenance for herself and her family, she opened a school, and, of course, taught her own children the elements of reading, along with those of her neighbors. The only school education which Robert ever received, in addition to what his mother gave him, was two or three months' instruction in writing at a school in the town of Ixworth. At the time when he was sent to this seminary, he was in his seventh year; and he was taken away so soon in consequence of the second marriage of his mother. Her new husband, probably, did not choose to be at any expense in educating the children of his predecessor.

We have no account in what manner Robert spent his time from his seventh to his eleventh year; but at this age he was taken into the service of a brother of his mother, a Mr. Austin, who was a respectable farmer on the lands of the Duke of Grafton. His uncle treated him exactly as he did his other servants, but that was kindly, and just as he treated his own sons. Robert, like all the rest of the household, labored as hard as he was able; but, on the other hand, he was comfortably fed and lodged, although his board seems

to have been all he received for his work. His mother undertook to provide him with the few clothes which he needed, and this was more than she well knew how to do. Indeed she found so much difficulty in fulfilling her engagement, that she at length wrote to two of her eldest sons, who were employed in London as shoemakers, requesting them to assist her, by trying to do something for their brother, who "was so small of his age," she added, "that Mr. Austin said that he was not likely to be able to get his living by hard labor." To this application her son George wrote in reply, that, if she would let Robert come to town, he would teach him to make shoes, and his other brother, Nathaniel, would clothe him. The anxious and affectionate mother assented to this proposal; but she could not be satisfied without accompanying her son to the metropolis, and putting him herself into his brother's hands. "She charged me," writes Mr. George Bloomfield, "as I valued a mother's blessing, to watch over him, to set good examples for him, and never to forget that he had lost his father."

When Robert came to London, he was in his fifteenth year. What acquaintance he had with books, at this time, is not stated; but it must have been extremely scanty. We find no notice, indeed, of his having been in the habit of reading at all, while he was with Mr. Austin. The place in which the boy was received by his two brothers was a garret in a court in Bell Alley, Coleman Street, where they had two *turn-up* beds, and five of them worked together. "As we were all single men," says George, "lodgers at a shilling per week each, our beds were coarse, and all things

far from being clean and snug, like what Robert had left at Sapiston. Robert was our man to fetch all things to hand. At noon he brought our dinners from the cook's shop; and any one of our fellow-workmen, that wanted to have any thing brought in, would send Robert, and assist in his work, and teach him for a recompense for his trouble. Every day when the boy from the public house came for the pewter pots, and to learn what porter was wanted, he always brought the yesterday's newspaper. The reading of this newspaper, we had been used to take by turns; but, after Robert came, he mostly read for us, because his time was of the least value." The writer goes on to state, that in this his occupation of reader of the newspapers, Robert frequently met with words which were new to him, and which he did not understand — a circumstance of which he often complained. So one day his brother, happening to see, on a book-stall, a small English dictionary, which had been very ill used, bought it for him, for four-pence. This volume was to Robert a valuable treasure; and, by consulting and studying it, he soon learned to comprehend perfectly whatever he read. The pronunciation of some of the hard words, however, caused him much trouble; but by an auspicious circumstance he was at length put into the way of having his difficulties here also considerably diminished. One Sabbath evening, he and his brother chanced to walk into a dissenting meeting-house in the Old Jewry, where an individual of great popularity and talent was delivering a discourse. This was Mr. Fawcet. His manner was highly rhetorical. Robert was so much

struck by his oratory, that, from this time, he made a point of regularly attending the chapel every Sabbath evening. In addition to the higher improvement of Mr. Fawcet's discourses, he learnt from him the proper accentuation of difficult words, which he had little chance of hearing pronounced elsewhere. He also accompanied his brother sometimes, though not often, to a debating society. Besides the newspapers, too, he at this time read aloud to his brothers and their fellow-workmen several books of considerable extent — a history of England, British Traveller, and a geography — a sixpenny number of each of which in folio they took in every week. Robert spent in this way about as many hours every week in reading, as boys generally do in play.

These studies, even though somewhat reluctantly applied to by Robert, doubtless had considerable effect in augmenting the boy's knowledge, and otherwise enlarging his mind. But it was a work different from any of those which have been mentioned, which first awakened his literary genius. "I at this time," says Mr. George Bloomfield, "read the London Magazine, and in that work about two sheets were set apart for a Review. Robert seemed always eager to read this Review. Here he could see what the literary men were doing, and learn how to judge of the merits of the works which came out; and I observed that he always looked at the poet's corner. One day he repeated a song which he composed to an old tune. I was much surprised that he should make so smooth verses; so I persuaded him to try whether the editor of our paper would give them a place in the poet's corner. He succeeded, and

they were printed." After this, Bloomfield contributed other pieces to the same publication into which his verses had been admitted; and under the impulse of its newly kindled excitement, his mind would seem to have suddenly made a start forwards, which could not escape the observation of his associates. His brother and fellow-workmen in the garret began to get instruction from him. Shortly after, upon removing to other lodgings, they found themselves in the same apartment with a singular character; a person named James Kay, a native of Dundee. He was a middle-aged man, and of a good understanding. He had many books, and some which he did not value; such as The Seasons, Paradise Lost, and some novels. These books he lent to Robert, who spent all his leisure hours in reading The Seasons. In this book he took great delight. This first inspired him, in all probability, with the thought of composing a long poem on rural subjects. The design was also favored, in some degree, by a visit of two months, which he was induced to pay about this time to his native district. On this occasion, his old master, Mr. Austin, kindly invited him to make his house his home; and the opportunity he thus had of reviewing, with a more informed eye, the scenes in which he had spent his early years, could hardly fail to act, with a powerful effect, in exciting his imagination. It was at last arranged that he should be taken as an apprentice by his brother's landlord, who was a freeman of the city; and he returned to London. He was at this time eighteen years of age. It was not intended that his master should ever avail himself of the power which the indentures

gave him, and he behaved in this matter very honorably. Robert, in two years more, learnt to work very expertly at the shoemaking business. For some years after this, his literary performances seem to have amounted merely to a few effusions in verse, which he used generally to transmit in letters to his brother, who had now gone to live at Bury St. Edmunds, in his native county. Meanwhile he studied music, and became a good player on the violin.

About this time he was married, and hired a room in the second story of a house in Coleman Street. The landlord gave him leave to work at his trade in the light garret two flights of stairs higher.

It was while he sat plying his trade in the garret, in Bell Alley, with six or seven other workmen around him, that Bloomfield composed the work which first made his talents generally known, and for which principally he continues to be remembered, — his "Farmer's Boy." It is a very interesting fact, that, notwithstanding the many elements of disturbance and interruption in the midst of which the author must, in such a situation, have had to proceed through his task, nearly the half of this poem was completed before he committed a line of it to paper. This is an uncommon instance both of memory and of self-abstraction. His feat, on this occasion, appears to have amounted to the composing and recollecting of nearly six hundred lines, without the aid of any record. The production of all this poetry, in the circumstances which have been mentioned, perhaps deserves to be accounted a still more wonderful achievement than its retention.

When the "Farmer's Boy" was finished, Bloomfield offered it to several booksellers, none of whom received it favorably. The editor of the Monthly Magazine, in the number for September, 1823, gives the following account of his appearance: — "He brought his poem to our office; and, though his unpolished appearance, his coarse handwriting, and wretched orthography, afforded no prospect that his production could be printed, yet he found attention by his repeated calls, and by the humility of his expectations, which were limited to half a dozen copies of the Magazine. At length, on his name being announced where a literary gentleman, particularly conversant in rural economy, happened to be present, the poem was finally reëxamined; and its general aspect excited the risibility of that gentleman in so pointed a manner, that Bloomfield was called into the room, and exhorted not to waste his time, and neglect his employment, in making vain attempts, and particularly in treading on ground which Thomson had sanctified. His earnestness and confidence, however, led the editor to advise him to consult his countryman, Mr. Capel Lofft, of Trooton, to whom he gave him a letter of introduction. On his departure, the gentleman present warmly complimented the editor on the sound advice which he had given the 'poor fellow;' and it was mutually conceived that an industrious man was thereby likely to be saved from a ruinous infatuation."

Mr. Lofft in time received the poem, and soon came to the conclusion, that, notwithstanding its forbidding aspect, it possessed original merit of a high order. Through his exertions it was sold to

the publishers, Messrs. Vernor and Hood, for £50. These gentlemen subsequently acted very liberally in giving to the poet an additional sum of £200, and an interest in the copyright of his production. As soon as published, the poem was received with unexpected admiration. It was praised by literary men and critics, and read by every body. This might seem the more remarkable because of its resemblance, at the first sight, to the "Seasons" of Thomson. Like that poet of nature, he sings of "Spring," "Summer," "Autumn," and "Winter." But the resemblance is almost confined to the mere announcement of the themes; for while Thomson weaves into his poem the various events of the rolling year, wherever witnessed or however produced, Bloomfield confines himself to the humble affairs of the farm. It is, indeed, his own early life, that he lives over again. His tender imagination hallows the lowly paths which his boyish footsteps trod, and out of ordinary and vulgar events gathers the themes of poetry. Thus do fragrant and beautiful flowers grow from the rankest soil. It is not nature which is vulgar; but we, with our gross conceptions, make it appear so. He, from whose eyes the scales have fallen, may see in events the most common and lowly, a soul of beauty.

Bloomfield sufficiently indicates the course of his poem, in the invocation with which the first brief canto opens: —

"O come, blest Spirit! whatsoe'er thou art,
Thou kindling warmth that hoverest round my heart,
Sweet inmate, hail! thou source of sterling joy,
That poverty itself cannot destroy,
Be thou my muse; and faithful still to me,
Retrace the paths of wild obscurity.

No deeds of arms my humble lines rehearse;
No alpine wonders thunder through my verse;
The roaring cataract, the snow-topt hill,
Inspiring awe, till breath itself stands still;
Nature's sublimer scenes ne'er charmed mine eyes,
Nor science led me through the boundless skies.
From meaner objects far my raptures flow:
O point these raptures! bid my bosom glow!
And lead my soul to extacies of praise
For all the blessings of my infant days!
Bear me through regions where gay fancy dwells;
But mould to truth's fair form what memory tells."

The poem throughout is characterized by simplicity and truth; and in these respects, as well as in picturesqueness, pathos, and strictly pastoral imagery, it probably equals any poem of the kind ever published. Within the first three years after its appearance, seven editions, comprising in all twenty-six thousand copies, were printed, and new impressions have since been repeatedly called for. In 1805, it was translated into Latin by Mr. Clubbe. It was also translated into French, under the title of *Le Valet du Fermier.*

From various sources the successful poet received substantial marks of the esteem in which he was held. Subscriptions were raised for him; and many of the nobility, with the Duke of York at their head, made him valuable presents. The Duke of Grafton settled upon him a small annuity, and made him an under sealer in the seal-office. Besides this, the sale of the work itself brought him in a considerable sum. No wonder he said that "his good fortune appeared to him like a dream."

The circumstances of his subsequent life were not so happy as this auspicious commencement of his literary career seemed to promise. Ill health

obliged him to give up his post at the seal-office, and he again resorted to his old trade of shoemaking, adding to it the making of Æolian harps. Having engaged in the bookselling business, he was unsuccessful; and this, together with a diminished sale of his poems and his liberal charity to his relatives, who were numerous and all poor, reduced him almost to poverty. Mr. Rogers exerted himself to obtain a pension for his way-worn and sad-hearted brother poet, and Mr. Southey also manifested a deep interest in his welfare. Ill health was added to the sorrows of poverty, and a continual headache and great nervous irritability sometimes threatened to deprive him of reason. From this he was perhaps saved only by his decease. He removed to the country, and died at Shefford, in Bedfordshire, August 19, 1823, in the fifty-seventh year of his age. During his life he never deserted the muses. He published several short pieces in the Monthly Mirror; a collection of rural tales; and several volumes of poems. One of his productions, "May-day with the Muses," published in the year of his death, "opens with a fine burst of poetical though melancholy feeling."

"Oh for the strength to paint my joy once more!
That joy I feel when winter's reign is o'er;
When the dark despot lifts his hoary brow,
And seeks his polar realm's eternal snow;
Though bleak November's fogs oppress my brain,
Shake every nerve, and struggling fancy chain;
Though time creeps o'er me with his palsied hand,
And frost-like bids the stream of passion stand."

These later works of his are of various degrees of merit. We will quote two of his shorter pieces,

"The Soldier's Home," and some lines "To his Wife," as happily exhibiting some of the sweetest characteristics of his poetry. Of the first, Professor Wilson remarks, "The topic is trite, but in Mr. Bloomfield's hands it almost assumes a character of novelty. Burns's 'Soldier's Return' is not, to our taste, one whit superior."

THE SOLDIER'S HOME.

"My untried muse shall no high tone assume,
Nor strut in arms — farewell my cap and plume!
Brief be my verse, a task within my power,
I tell my feelings in one happy hour.
But what an hour was that? when from the main
I reached this lovely valley once again!
A glorious harvest filled my eager sight,
Half shocked, half waving in a flood of light;
On that poor cottage roof where I was born,
The sun looked down as in life's early morn.
I gazed around, but not a soul appeared;
I listened on the threshold, nothing heard;
I called my father thrice, but no one came;
It was not fear or grief that shook my frame,
But an o'erpowering sense of peace and home,
Of toils gone by, perhaps of joys to come.
The door invitingly stood open wide;
I shook my dust, and set my staff aside.
How sweet it was to breathe that cooler air,
And take possession of my father's chair!
Beneath my elbow, on the solid frame,
Appeared the rough initials of my name,
Cut forty years before! The same old clock
Struck the same bell, and gave my heart a shock
I never can forget. A short breeze sprung,
And while a sigh was trembling on my tongue,
Caught the old dangling almanacs behind,
And up they flew like banners in the wind;
Then gently, singly, down, down, down they went,
And told of twenty years that I had spent
Far from my native land. That instant came
A robin on the threshold; though so tame,

At first he looked distrustful, almost shy,
And cast on me his coal-black, steadfast eye,
And seemed to say (past friendship to renew),
'Ah ha! old worn-out soldier, is it you?'
Through the room ranged the imprisoned humble bee,
And bombed, and bounced, and struggled to be free;
Dashing against the panes with sullen roar,
That threw their diamond sunlight on the floor;
That floor, clean-sanded, where my fancy strayed
O'er undulating waves the broom had made;
Reminding me of those of hideous forms
That met us as we passed the Cape of storms,
Where high and loud they break and peace comes never;
They roll and foam, and roll and foam for ever.
But here was peace, that peace which home can yield:
The grasshopper, the partridge in the field,
And ticking clock, were all at once become
The substitute for clarion, fife, and drum.
While thus I mused, still gazing, gazing still,
On beds of moss that spread the window sill,

* * * * * * *

Feelings on feelings, mingling, doubling rose;
My heart felt every thing but calm repose:
I could not reckon minutes, hours, nor years,
But rose at once and bursted into tears;
Then, like a fool, confused, sat down again,
And thought upon the past with shame and pain;
I raved at war and all its horrid cost,
And glory's quagmire, where the brave are lost.
On carnage, fire, and plunder, long I mused,
And cursed the murdering weapons I had used.

* * * * * * * *

But why thus spin my tale — thus tedious be?
Happy old soldier! what's the world to me!"

The lines to "his wife," are full of delicate affection, full too of his narrow observation of nature and of genial sympathy with all things. They give us a delightful picture of the heart of him who wrote them.

TO HIS WIFE.

"I rise, dear Mary, from the soundest rest,
A wandering, way-worn, musing, singing guest.
I claim the privilege of hill and plain:
Mine are the woods, and all that they contain;
The unpolluted gale, which sweeps the glade;
All the cool blessings of the solemn shade;
Health, and the flow of happiness sincere.
Yet there's one wish — I wish that thou wert here:
Free from the trammels of domestic care,
With me these dear autumnal sweets to share;
To share my heart's ungovernable joy,
And keep the birth-day of our poor lame boy.
Ah! that's a tender string! Yet since I find
That scenes like these can soothe the harassed mind,
Trust me, 'twould set thy jaded spirits free,
To wander thus through vales and woods with me.
Thou know'st how much I love to steal away
From noise, from uproar, and the blaze of day;
With double transport would my heart rebound
To lead thee where the clustering nuts are found:
No toilsome efforts would our task demand,
For the brown treasure stoops to meet the hand.
Round the tall hazel, beds of moss appear
In green swards nibbled by the forest deer;
Sun, and alternate shade; while o'er our heads
The cawing rook his glossy pinions spreads;
The noisy jay, his wild woods dashing through;
The ring-dove's chorus, and the rustling bough;
The far-resounding gate; the kite's shrill scream;
The distant ploughman's halloo to his team.
This is the chorus to my soul so dear;
It would delight thee too, wert thou but here;
For we might talk of home, and muse o'er days
Of sad distress, and Heaven's mysterious ways:
Our chequered fortunes with a smile retrace,
And build new hopes upon our infant race;
Pour our thanksgivings forth, and weep the while;
Or pray for blessings on our native isle.
But vain the wish! Mary, thy sighs forbear,
Nor grudge the pleasure which thou canst not share:
Make home delightful, kindly wish for me,
And I'll leave hills, and dales, and woods for thee."

As these extracts sufficiently indicate, the poet was of an affectionate and amiable character. His genius did not get the better of his modesty, nor destroy his attachment for his humble but faithful friends. It is gratifying to know that those excellent and affectionate relations, his mother and brother, both lived to witness the prosperity of him who had been to each, in other days, the object of so much anxious care. It was the dearest of the poet's gratifications, when his book was printed, to present a copy of it to his mother, to whom upon that occasion, he had it in his power, for the first time, to pay a visit, after twelve years' absence from his native village. From a tribute to his memory, by a brother poet, Bernard Barton, we quote a single verse as a conclusion to this imperfect sketch.

"It is not quaint and local terms
Besprinkled o'er thy rustic lay,
Though well such dialect confirms,
Its power unlettered minds to sway;
But 'tis not these that most display
Thy sweetest charms, thy gentlest thrall,—
Words, phrases, fashion, pass away,
But Truth and Nature live through all."

ISAAC MILNER.

This distinguished mathematician, and exemplary divine, was born in the neighborhood of Leeds, England, in the year 1751. His father was a man of strong understanding, who, having felt, in his own case, the want of a good education, formed an early resolution to remedy that defect in his children, as far as in him lay. Accordingly, Isaac, the youngest, was sent, at six years of age, with his brother Joseph, to the grammar-school of his native town, where he made a very rapid progress in classical learning. Just as he was entering upon the study of the Greek language, however, in his tenth year, the death of his father, who had been unfortunate in business, and had suffered materially in his circumstances from the incidents of the rebellion of 1745, blighted all his prospects of a literary education; his mother being under the painful necessity of taking him from school, and placing him in a situation in Leeds, in which he would have an opportunity of learning several branches of the woollen manufacture. His father had been a master-weaver; and when he fell into difficulties, his sons, lads as they were, rose up early and sat up late, to contribute, by the produce of their spinning-wheels, to the support of the family, which was placed in such straitened circumstances, that, Joseph requiring a Greek book, while at school, to enable him to pass into a higher class, his father sent it home, one Saturday night,

instead of a joint of meat for their Sunday's dinner, not having the means of procuring both. When his death deprived his wife and children of the material advantage of his assistance, Joseph, during the intervals of school, and Isaac, before he went to his work as an apprentice, and after he came home from it, rising in winter many hours before day-break, and working by candle-light, plied the shuttle incessantly, for the better support of their mother, left in an ill state of health, to get a scanty living by the labor of her hands. Isaac remained with his master for several years, until his brother Joseph (who from the humble station of chapel clerk of Catharine Hall, Cambridge — in which capacity, supported by several admirers of his extraordinary learning in Leeds, he entered that university soon after the death of his father — had become head-master of the grammar school, and afterwards lecturer of the principal church in Hull), from an income of £200 a year, generously resolved to take upon himself the charge of his education for the church. Before, however, he had him removed to Hull, he commissioned a clergyman at Leeds to ascertain what were his attainments. The degree of knowledge which he had acquired, the accuracy of his ideas, and the astonishing command of language which he possessed, fully satisfied him of the competency of the lad for the situation in which it was intended to place him. A few days after, at the age of seventeen, he left Leeds and the occupation of a weaver, for his brother's dwelling and the more congenial pursuits of a literary life. Though still but a boy, he was found to have been so well grounded in the classics by Moore, the

usher of the grammar-school at Leeds, as to be able to render material assistance to his brother, in teaching the lower boys of his crowded classes. Whilst not thus engaged, he pursued his own studies with his wonted diligence, and soon became a complete and accomplished classic. In mathematics, also, his attainments must also at this time have been considerable, as his brother, whose preëminence as a scholar lay not in these pursuits, on the occurrence of any algebraical difficulty, was in the habit of sending to him for its solution. Having thus redoubled his diligence, to make up for the time he had lost, — well prepared by a most laborious and successful, if not a long course of study, aided by natural talents of unusual depth and splendor, to make a conspicuous figure at the university,— he was entered a sizar (an indigent student supported by benefactions called exhibitions) at Queen's College, Cambridge, in the year 1770, where he greatly distinguished himself by his learning and application. He took his bachelor's degree in 1774, when he attained the high honor of being at once the senior wrangler of his year and the first Smith's prize man. So strongly, indeed, was his superiority over all his competitors marked on this occasion, that, contrary to the usual practice, it was deemed right, by the examiners, to interpose a blank space between them; and he was honored with the designation of *Incomparabilis*, a distinction which has never been conferred but in one other instance. Nor was his learning confined to mathematics, for he was not less eminent in other walks of science and literature. In theology, we learn from Bishop Watson, that he was so deeply

read, that, when he kept his *act*, the divinity school was thronged with auditors; and their curiosity was amply gratified by listening to what the prelate terms a "real academical entertainment." The circumstance of these disputations being held in Latin, proves also that Milner must have made great progress in classical knowledge.

In the following year, Mr. Milner was elected a fellow of his college. In 1783 and in 1785, he acted as moderator in the schools; was nominated, in 1782, one of the proctors, and in 1783, a taxor of the university. In the latter year, also, he was chosen to be the first Jacksonian professor of natural and experimental philosophy and chemistry, in which sciences he had previously given several courses of public lectures in the university, with great acceptance.

The acquaintance of Milner with Mr. Wilberforce, and the influence he exerted upon that distinguished philanthropist, are among the most interesting circumstances of his life. When a boy, Wilberforce attended the school of the Milners, at Hull. This was the commencement of their acquaintance; and when, some years afterwards, Mr. Wilberforce was seeking a companion for a tour upon the continent, he proposed to Mr. Milner to accompany him. Accordingly, on the 20th of October, 1784, they started; Milner and Wilberforce in one carriage, and the mother, sister, and two cousins of the latter following them in another. They crossed France to Lyons, dropped down the "arrowy Rhone," and made quite a long stay at Nice. Mr. Wilberforce had chosen his companion for vivacity and sterling good sense, for his talents and great acquire-

ments, "his cheerfulness, good-nature, and powers of social entertainment."* But there were other qualities in this man, of which the young and gay traveller was not aware, but which, under the direction of an over-watching Providence, were made productive of most important results. Mr. Wilberforce himself says of him, "Though Milner's religious principles were even now, in theory, much the same as in later life, yet they had at this time little practical effect upon his conduct. He was free from every taint of vice, but not more attentive than others to religion; he appeared in all respects like an ordinary man of the world, mixing like myself in all companies, and joining as readily as others in the prevalent Sunday parties. Indeed, when I engaged him as a companion in my tour, I knew not that he had any deeper principles. The first time I discovered it, was at the public table at Scarborough. The conversation turned on Mr. Stillingfleet; and I spoke of him as a good man, but one who carried things too far. — "Not a bit too far," said Milner; and to this opinion he adhered, when we renewed the conversation in the evening on the Sands. This declaration greatly surprised me; and it was agreed that at some future time we would talk the matter over. Had I known at first what his opinions were, it would have decided me against

* In all the scenes of gayety upon the continent, Wilberforce "was constantly accompanied by Milner, whose vivacity and sense, joined with rustic and unpolished manners, continually amused his friends. — "Pretty boy! pretty boy!" uttered in the broadest Yorkshire dialect, whilst he stroked familiarly his head, was the mode in which he first addressed the young Prince William of Gloucester." — *Life of Wilberforce.*

making the offer; so true it is that a gracious hand leads us in ways that we know not, and blesses us not only without, but even against, our plans and inclinations." Wilberforce was at this time among the gayest of the gay, and was quite ready to turn his raillery against all seriousness in religion, as extravagant and methodistical; but Milner met his jocose attack with earnestness. "I am no match for you, Wilberforce," he would say to him, "in this running fire; but, if you really wish to discuss these subjects seriously, I will gladly enter on them with you."

Another small circumstance shows the turn of Milner's mind. By chance, a short time before they started on their tour, Wilberforce took up "Doddridge's Rise and Progress of Religion," and, casting his eye over it, asked his companion what the character of it was. "It is one of the best books ever written," was the reply: "let us take it with us, and read it on our journey." The result was that it was taken and read, and Wilberforce determined at some future time to examine the scriptures for himself, and find out the truth of what the little volume stated.

The two travellers were called home from their journey rather unexpectedly, by the political condition of England. Leaving the ladies of the party at Nice, they made their way through Antibes, across France, with all haste. Once on their return, Wilberforce seems to have been in great danger, from which his friend but just saved him. "As they climbed a frozen road upon the hills of Burgundy, the weight of their carriage overpowered the horses; and it was just running over a frightful precipice, when Milner, who was

walking behind, perceived the danger, and, by a sudden effort of his great strength of muscle, arrested its descent." After the close of the session of Parliament, which took place about the end of June, the two friends started again, and met their former companions at Genoa. From this place they travelled together as before to Switzerland by way of Turin. During this journey, they began, according to Milner's suggestion, to read the Greek Testament together, and carefully to examine its doctrines, and discuss its principles.

The result is known to all who know any thing of the later life of Wilberforce. "By degrees," he says of his companion, "I imbibed his sentiments, though I must confess with shame, that they long remained merely as opinions assented to by my understanding, but not influencing my heart. My interest in them certainly increased, and at length I began to be impressed with a sense of their importance. Milner, though full of levity on all other subjects, never spoke on this but with the utmost seriousness, and all he said tended to increase my attention to religion." The friendship, thus cemented, continued without an interruption until the death of Milner, thirty-seven years afterwards.

In the year 1788, Mr. Milner was elected president of the college, to which, as a student, he had been so bright an ornament, and, about the same time, took his degree of doctor in divinity.

For some years previously, the college, which had been the asylum of Erasmus, was rapidly declining in its reputation for learning and discipline; but, from the moment of his assuming the reins of its government, he labored indefatigably

and successfully to restore its ancient character for both. He introduced into its fellowships men eminent for their talents at other colleges. It specially became celebrated, during his presidency, for the number of pious young men who studied there for the Christian ministry, and who are now some of the most popular and zealous clergymen of the establishment. Dr. Milner aided the cause of learning, in no slight degree, by giving a strong impulse to the study of mathematics and the various branches of experimental philosophy. In 1791, he was raised to the deanery of Carlisle.

In 1798, he was placed in the chair of the Lucasian professor of mathematics, a situation worth about £350 a year, which had been successively filled by Isaac Barrow, Sir Isaac Newton, Whiston, Saunderson, Colson, and Waring, the most eminent mathematicians of their day. He twice served the office of vice-chancellor of the university. As an author, he is advantageously known by the life of his brother Joseph; by strictures on some of the publications of Dr. Herbert Marsh — a most masterly defence of the Bible Society; by a continuation of the Church History begun by his brother; and by papers contributed to the Transactions of the Royal Society, of which he was a fellow.

He died at the house of his friend, Mr. Wilberforce, in London, on the 1st of April, 1820, in the seventieth year of his age. He left the world in humble hope of eternal life, through the mediation and merits of the Lord Jesus Christ.

"In intellectual endowment," says his biographer (supposed to be Mr. Wilberforce), "Isaac Milner was unquestionably one of the first men

of his day. He possessed prodigious powers of understanding. As a mathematician, he was one of the first, if not the very first, of his age. He had also a great partiality for mechanics; and spending most of his leisure, during the lifetime of his brother, at Hull, his lodgings there were a complete workshop, filled with all kinds of carpenter's and turner's tools. There he was accustomed daily to relax his mind from the fatigues of study by some manual labor; and so much was he interested in these pursuits, that his lathe and appendages for turning were not only extremely curious, but very expensive, having cost him no less a sum than one hundred and forty guineas. He had also a very ingenious machine, partly of his own invention, which formed and polished at the same time, watch wheels of every description, with the utmost possible exactness."

Humility was a very striking feature in his character. Never, at any period of his life, was he ashamed of his former lowly station; and after he had become the head of a college, a dignified member of the clerical order, and had proved himself one of the first scholars in the country, whenever he passed through Leeds, as he generally did on his journeys to the North, he never failed to visit the obscure friends of his boyish days; and, by his well-timed acts of generosity towards them, often did he "deliver the poor and fatherless, and cause the widow's heart to sing for joy." Isaac Milner, the poor fatherless weaver, and the very reverend Isaac Milner, president of Queen's College, Lucasian professor of mathematics, and dean of Carlisle, rich in this world's

goods,* as well as in literary fame, never wore even the semblance of two different men. Through life, he manifested in his deportment the unaffected simplicity of manners and affability of disposition appropriate to his early station in society, but not less adorning the high sphere in which, by the providence of God, he afterwards was called to move.

* Notwithstanding his great liberality, he accumulated from the savings of his preferment a fortune of from fifty to sixty thousand pounds.

SIR WILLIAM JONES.

There is a sense in which every educated man may be said to be self-taught. All the aids which he receives from instructors, from libraries, and the whole apparatus of universities, will avail him little, without constant and diligent personal efforts. No man has made great attainments, but by severe toil. We introduce the name of Sir William Jones, not because he belongs to that meritorious class of persons, who, almost without means, have conquered great difficulties; but because he used the means which a liberal fortune bestowed, with so much assiduity, that, although dying at an early age, his name has ever since remained as one of the watchwords of scholars.

Sir William Jones was born in London, in the year 1746. His father was distinguished as a mathematical scholar, and was on terms of close friendship with some of the most distinguished scientific and literary men of England; among whom were Lord Hardwicke (afterward Lord Chancellor), Halley, Mead, and especially Sir Isaac Newton. His mother was the daughter of a celebrated cabinet maker, who had risen to great eminence in his profession, and, by the agreeableness of his manners and his good sense, had become an acceptable companion of highly-educated gentlemen. When William was but three years old, his father died, and the care of his education devolved upon his mother. Being a woman of strong mind, she determined to devote

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herself to this object as her first duty. Accordingly, although invited by the Countess of Macclesfield to remain with her at her residence at Sherborne Castle, she declined the solicitation, lest it should interfere with the plans she had formed for her son. The boy early showed an inquisitiveness uncommon among children; and to his application for instruction, his mother always replied, *Read, and you will know.* To this maxim the great scholar, in after life, acknowledged that he was mainly indebted for his attainments.

One of the most celebrated schools in England is that at Harrow, a village about ten miles north-west of London. It was founded in the reign of Elizabeth, and has educated its proportion of the distinguished scholars and statesmen of England. To this school William Jones was sent in 1753, at about the beginning of his eighth year. His mother accompanied him to the place, and remained there in order to render him such assistance, and give such a direction to his mind, as she thought would be for his good. For two years, he was distinguished more for diligence than precocity, and divided his attention between his books and a little garden which he cultivated and embellished. He was so unfortunate, in his ninth year, as to break his thigh bone; by which accident he was detained from school for a year. Though his classical studies were intermitted during this period, yet his mother directed his attention to many of the best English writers, whose works were suited to his age and tastes. Some of the poems of Pope and Dryden afforded him great delight. On returning to school again, he was put into the same class which he had left;

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and their increased attainments, during his year of vacation, made *him* appear the more defective. The master, who mistook his necessary failure for the effect of dullness or laziness, threatened and punished, but without producing the wished-for result. It was a question, whether the boy would not be discouraged by harsh treatment, and his feelings become callous and indifferent; but his spirit rose above the little adversities of his situation. Of his own accord, he began to study the elementary treatises, which taught him the principles that his class had learnt while he was sick. In a few months, it became evident that the backward boy was neither lazy nor dull. He recovered his standing; took the head of his class; in every instance gained the prize offered for any exercise; and carried his studies much beyond what had ever been required of the scholars in his form.

In his twelfth year, he entered the upper school, and soon had occasion to give an example of the remarkable powers of his memory. His schoolfellows, for their amusement, were endeavoring to represent a play, and, at his suggestion, had fixed on the Tempest. Of this, however, they had no copy, neither could one be easily procured. To supply the deficiency, young Jones wrote it out from memory, with sufficient correctness to enable them to act it with great satisfaction to themselves. About the same time, he began the study of Greek, and prosecuted his Latin with more zeal than ever. He conquered many of the difficulties of Latin prosody, before his teacher and schoolmates were aware that he had thought of the subject. The pastorals of Virgil, and several

of the epistles of Ovid, he translated into English verse; and it was not uncommon for boys of the superior classes to come to him for assistance in writing their exercises. The holidays he usually devoted to study. On one occasion, he invented a play, which showed the tendency of his mind. His principal assistants were Dr. Bennett (the future Bishop of Cloyne) and Dr. Parr. The fields of Harrow they divided into states and kingdoms, according to the map of Greece, each assuming one as his dominion, and with it taking an ancient name. The hillocks were fortresses, which were attacked by others of their schoolfellows, who consented to be called barbarians; and the mimic wars which followed, gave rise to councils, harangues, embassies, and memorials, and whatever other operations of states and governments their young heads could learn about. In these operations, Jones was the leader.*

* It is interesting to notice the opinions which his schoolfellows and his principal instructor had of him at this early age. The Bishop of Cloyne wrote many years afterward: "I knew him from the early age of eight or nine, and he was always an *uncommon* boy. Great abilities, great particularity of thinking, fondness for writing verses and plays of various kinds, and a degree of integrity and manly courage, of which I remember many instances, distinguished him even at that period. I loved him and revered him, and, though one or two years older than he was, was always instructed by him from my earliest age. In a word, I can only say of this amiable and wonderful man, that he had more virtues and less faults than I ever yet saw in any human being; and that the goodness of his head, admirable as it was, was exceeded by that of his heart." Dr. Thackeray, the head master of Harrow, used to say, that Jones "was a boy of so active a mind, that, if he were left naked and friendless on Salisbury plain, he would nevertheless find the road to fame and riches."

When Jones was fifteen years old, Dr. Sumner succeeded Dr. Thackeray; and, under his supervision, the young scholar devoted the next two years of his life to the diligent study of the best ancient authors. He did not, however, confine himself to these. During his vacations, he found time to perfect himself in French, to study Italian and arithmetic. He also learned something of Arabic, and enough of Hebrew to enable him to read some of the Psalms in the original. His inclination to study at this period was, indeed, so earnest, that at last it was thought best to check it, lest he might injure his health. His attendance at school was therefore dispensed with, and he was for a while forbidden to study.

At the age of seventeen, it was decided that he should go to one of the universities. This determination was adopted with some hesitation, since his mother had been strongly urged by some distinguished lawyers to place him in the office of an eminent special pleader. He had already read the Abridgment of Coke's Institutions, and his friends thought that his learning and industry would insure him brilliant success at the bar. To this course he was himself opposed; and the strong advice of Dr. Sumner, added to certain considerations of economy, finally led to the wished-for decision. In the spring of 1764, he went to Oxford, and entered University College.*

For the first few months of his residence at

* The following form of his admission may be interesting to some. It is copied from his own writing. "Ego Gulielmus Jones, filius unicus Gulielmi Jones, Armigeri de civitate Lond. lubens subscribo sub tutamine Magistri Betts, et Magistri Coulson, annos natus septemdecim."

Oxford, Mr. Jones was much disappointed at the course of instruction. He expected assistance and encouragement which he did not receive; the lectures seemed to him artificial and dull; and all genial criticism, rhetoric, and poetry, as good as dead. This opinion he afterwards considerably modified. A testimony to his scholarship was soon given, by his being elected one of the four scholars on the foundation of Sir Simon Bennett. His love for Oriental literature began to revive. He resumed the Arabic, and was so earnest in the pursuit of it, that, having accidentally found in London a native of Aleppo, who could speak the vulgar Arabic fluently, he induced him to come to Oxford, in order that he might learn from him the pronunciation of the language. He hoped to induce other scholars to join with him, and so to diminish the expense; but in this he failed, and he was obliged to maintain the Arab alone, at a time when he could ill afford the additional demand upon his finances. To the Arabic he soon added the Persian. Nor did he in the mean time neglect his old friends, the Greeks and Latins. The Greek poets and historians, and especially the writings of Plato, he carefully perused; reading, according to the advice of many eminent scholars, with pen in hand, ready to note down whatever struck him with greatest force, or to follow out the suggestions which he derived from them. With the Italian, Spanish, and Portuguese, he had become so familiar as to be able to read easily their best authors. Nor did he neglect physical education. He was always fond of bodily exercises, and pursued them systematically, both as invigorating his frame, and as

fitting him the better to endure the active exertions to which he might be called in future life. Thus, as he said, "with the fortune of a peasant, he gave himself the education of a prince." It is evident, that, for these extraordinary attainments, he was indebted to unwearying diligence and fidelity, quite as much as to natural capacity.

While pursuing these courses of study at the university, he found that his necessary expenses were making large demands upon the limited income of his mother, and he thought it proper to look for some occupation that might relieve her of the burden. Whether or not this was known to his friends, we do not know; but he soon received an invitation to become the private tutor of Lord Althorpe (afterwards Earl Spencer). This he concluded to accept, and, in his nineteenth year, in the summer of 1765, went to Wimbledon Park to undertake the education of his young pupil, at that time but seven years of age.

During the next summer, 1766, he was very unexpectedly chosen to a fellowship at Oxford. This was extremely gratifying to him; since, besides being an honorable testimony to his scholarship, it gave him what he thought an absolute independence. The income was indeed but a hundred pounds, but it was at that time sufficient for the expenses of a young man of prudent habits. A residence at Oxford too, with its ample libraries and society of learned men, was just what he most desired. Had it been offered to him a year earlier, it might have changed the whole course of his life. As it was, although he accepted the honor, he still continued in his situation as tutor.

During this same year, he received from the Duke of Grafton, then at the head of the treasury, the offer of the post of Interpreter of Eastern languages, which, however, he did not accept. At Wimbledon, he found much to delight him; but that which seemed to him of greatest value was a well-stored library, almost every volume of which he read, or to some extent examined. About this time, he began his Commentaries on Asiatic Poetry, after the manner of Dr. Lowth's Prelections on Hebrew Poetry.

It will not be practicable, within the limits of this brief sketch, to follow minutely the course of this most diligent and distinguished young scholar. We find him the next year, 1767, during a visit to the continent, on which he accompanied the family of Lord Spenser, learning the German, at that time not considered an essential part of a thorough education. After his return home, in the same year, he nearly completed his Commentaries, transcribed an Arabic manuscript which he had borrowed, and began to learn the Chinese. Another slight circumstance which took place about the same time, had an important bearing on his future pursuits. He happened to read, from curiosity, a very old work by Fortescue, on the laws of England, in which the condition of the English is contrasted with that of other nations. The discussion opened to the ardent mind of the curious scholar a world of reflections. This was a subject upon which he had not thought, but one upon which his knowledge gave him the opportunity of collecting materials for a comprehensive and true judgment. From this time forward, his mind was interested in the great subject of Jurisprudence.

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In the spring of the year 1768, he received a proposal of a singular nature, but one which showed how widely his reputation as a ripe scholar extended. The King of Denmark, then upon a visit to England, had brought with him an Eastern manuscript, containing the life of Nadir Shah, which he was desirous of having translated in England. The Secretary of State sent the volume to Mr. Jones, with a request that he would translate it into the *French language*. Mr. Jones declined; but the application was renewed in such a form, and with so much urgency, that he was afraid of being thought morose or ill-natured, if he persisted in refusing. It would have been much easier for him to translate it into Latin; and although he took great pains to acquire a good French style, he thought it necessary to submit every page to a native of France. The work, difficult as it was, requiring a critical knowledge of two languages, one of which was then hardly known in Europe, was finished in a year. Mr. Jones was not then twenty-four!

During the time that he was engaged upon this serious task, he was not unmindful of other things. For the same reasons, in part, which led him formerly to practise horsemanship and fencing, he now took lessons in music. His idea of education was, that it should harmoniously develope all the powers of mind and body, and enlarge to the utmost the field of our sympathy. He also began about the same time to extend considerably his literary acquaintance. One of those with whom he formed a friendship was Count Revicski, afterwards imperial minister at Warsaw, and ambassador at the court of England. He was an accomplished

scholar, and an ardent Orientalist. Mr. Jones corresponded with him for some time, chiefly in Latin, occasionally in French.

During the summer of 1769, Mr. Jones had the pleasure of accompanying his young pupil to Harrow, and of enjoying again the society of his friend, Dr. Sumner. While there, he revised a Persian Grammar, which he had written some time before, and began a Persian Dictionary. He was led also, about the same time, to devote his attention more seriously to the evidences of the Christian religion. In order to form a better judgment, he determined to read the entire Bible in the original; and his conviction became thereby the firmer of its authenticity and inspiration.

The following, transcribed from his manuscript in his own Bible, has often been printed, but it is not on that account less worthy of insertion here. It contains his deliberate opinion, which he pronounced once, at least, before the Asiatic Society in India, of which he was founder and president. "I have carefully and regularly perused these Holy Scriptures, and am of opinion that the volume, independently of its divine origin, contains more sublimity, purer morality, more important history, and finer strains of eloquence, than can be collected from all other books, in whatever language they may have been written."

Although Mr. Jones's connection with the family of Lord Spencer was very agreeable, yet he began, after a time, to feel that his independent exertions were somewhat confined by his course of life; and that, while relying upon the patronage of those with whom he was then connected, there was less scope for the vigorous and manly em-

ployment of his own abilities. He determined, therefore, to commence the study of the law, re solving to make the practice of it his profession. He did not, at first, think it necessary to forsake entirely his oriental pursuits, nor would it have been possible for him to do so in a moment. Literature had become a part of his life. Still, he devoted himself with great assiduity to the study of jurisprudence. His letters at this time show that his mind was divided between the two pursuits.

"I have just begun," he writes on one occasion, "to contemplate the stately edifice of the laws of England —

'The gathered wisdom of a thousand years,'

if you will allow me to parody a line of Pope. I do not see why the study of the law is called dry and unpleasant; and I very much suspect that it seems so to those only who would think any study unpleasant, which required great application of the mind and exertion of the memory. * * * * I have opened two common-place books, the one of the law, the other of oratory, which is surely too much neglected by our modern speakers. * * * * But I must lay aside my studies for about six weeks, while I am printing my Grammar, from which a good deal is expected, and which I must endeavor to make as perfect as a human work can be. When that is finished, I shall attend the Court of King's Bench very constantly."

In 1772, Mr. Jones was elected Fellow of the Royal Society. In 1774, he published his Commentaries on Asiatic Poetry. They had been finished for some years; but he delayed the printing, in order to submit them to the criticism of

scholars. They were written in Latin, and commanded the approbation of the learned everywhere. Dr. Parr said of them, in a letter to the author, "I have read your book, De Poesi Asiatica, with all the attention that is due to a work so studiously designed, and so happily executed. * * * * The inaccuracies are very rare, and very trifling. On the whole, there is a purity, an ease, an elegance in the style, which show an accurate and most perfect knowledge of the Latin tongue. Your Latin translations in verse gave me great satisfaction. I am uncommonly charmed with the idyllium called Chrysis. The flow of the verses, the poetic style of the words, and the elegant turn of the whole poem, are admirable."

In a letter to him about this time, we find Lady Spencer thanking him for his *Andrometer*. This was a kind of scale which Mr. Jones had prepared, indicating the occupation to which his life should be devoted, if protracted to the age of threescore years and ten. The first thirty years he sets apart for laying the foundation of future activity, by a wide and thorough course of study in the languages, sciences, history, &c. The next twenty, he devotes mainly to public and professional occupations. Of the next ten, five are assigned to literary and scientific composition, and the remaining five to a continuation of former pursuits. The last ten he reserves for a dignified rest from labors, and enjoyment of the fruit of them, crowning the whole with a preparation for eternity. This sketch was rather a hasty methodising of his thoughts, than a sober statement of plans; but it shows that he was not content to live at haphazard. Nor did he intend to defer a preparation

for eternity till the close of life, but rather to indicate, that, at the advanced period to which he assigned it, this was the only subject which could with propriety engross the thoughts. As far as his own attainments were concerned, at the age when he made this sketch, he had far surpassed the limits which he had set for others. He was also destined to prove how vain are our plans for the future; how fragile are the air-castles with which we adorn the later years of our transitory existence.

Although we find, that with every year he felt the necessity of devoting himself without reserve to his profession, even to the extent of utterly abandoning his oriental studies, yet he could not entirely tear himself away from letters. He corresponded with some of the most learned men on the continent. In 1778, he published a translation of a part of the orations of Isæus. Nothing but exhausted health or spirits turned him from study. Even in the amusements to which he was occasionally driven, the eagerness of his spirit is exhibited. "I must tell you here, by way of parenthesis," he writes from Bath to Lord Althorpe, "that I joined a small party of hunters the other morning, and was in at the death of the hare; but I must confess that I think hare-hunting a very dull exercise, and fit rather for a huntress than a mighty hunter — rather for Diana than Orion. Had I the taste and vigor of Actæon, without his indiscreet curiosity, my game would be the stag and the fox, and I should leave the hare in peace, without sending her to her many friends. This heresy of mine may arise from my fondness for every thing vast, and my disdain of every thing little; and for the same

reason, I should prefer the more violent sport of the Asiatics, who enclose a whole district with toils, and then attack the tigers and leopards with javelins, to the sound of trumpets and clarions."

From suggestions made to him from various quarters, Mr. Jones supposed that he might receive the appointment of judge in the East Indies, a post for which his legal as well as oriental learning abundantly fitted him. This honor, however, which he earnestly desired, was not conferred till several years later. In the mean time, he pursued his profession with increasing success.

In 1780, he was afflicted by the death of that mother who had devoted herself so entirely to his education, and had rejoiced so sincerely in his prosperity. Her love he repaid with equal affection, and uniformly made her the confidant of his plans and hopes. During the same year, he made a memorandum of his proposed course of study, which, in addition to the *Andrometer*, before referred to, will show how broad were his plans, and how thoroughly he meant to carry them out. The memorandum, in his own handwriting, was as follows: — "*Resolved*, to learn no more *rudiments* of any kind, but to *perfect* myself in, first, twelve languages, as the *means* of acquiring accurate knowledge of the

I. History of 1. Man; 2. Nature.
II. Arts. 1. Rhetoric; 2. Poetry; 3. Painting; 4. Music.
III. Sciences. 1. Law; 2. Mathematics; 3. Dialectic.

The twelve languages are Greek, Latin, Italian, French, Spanish, Portuguese, Hebrew, Arabic, Persian, Turkish, German, English. 1780."

In March, 1783, the long-expected judgeship was conferred upon him. In expectation of it,

he had rather avoided a great increase of business at home, and had begun to feel the injury which the delay caused him. He was appointed a judge of the Supreme Court of Judicature at Fort William, in Bengal, and at the same time received the honor of knighthood. Being rendered, by this appointment, independent in his pecuniary relations, he consummated another ardent wish, in marrying the daughter of the Bishop of St. Asaph. In April of the same year, he embarked for India, in the Crocodile frigate. He never looked upon England again. He was thirty-seven years of age, in the full vigor of health, and abounding in hopes of honorable services and attainments in India.

During his voyage out, he prepared another of those memoranda which indicate so strongly the habit of his mind, his forecast, and unwillingness to leave the future employment of his time to the accidental allurements of the day. A scholar undoubtedly makes the least advancement when he studies without method or plan. With a course marked out beforehand, and followed with perseverance, his attainments are enlarged and insured. The following is the memorandum referred to: —

Objects of Inquiry during my Residence in Asia.

1. The Laws of the Hindus and Mahommedans.
2. The History of the *Ancient* World.
3. Proofs and Illustrations of Scripture.
4. Traditions concerning the Deluge, &c.
5. Modern Politics and Geography of Hindustan.
6. Best mode of governing Bengal.
7. Arithmetic and Geometry, and Mixed Sciences of the Asiatics.
8. Medicine, Chemistry, Surgery, and Anatomy of the Indians.

9. Natural productions of India.
10. Poetry, Rhetoric, and Morality of Asia.
11. Music of the Eastern Nations.
12. The Shi-King, or 300 Chinese Odes.
13. The best accounts of Thibet and Cashmir.
14. Trade, Manufacture, Agriculture, and Commerce of India.
15. Mogul Constitution, contained in the Defteri, Alemghiri, and Agein Acbari.
16. Mahratta Constitution.

To print and publish the *Gospel* of St. Luke in Arabic.
To publish Law Tracts in Persian or Arabic.
To print and publish the *Psalms* of *David* in Persian verse.
To compose, if God grant me life,
1. Elements of the Laws of England.
MODEL — The Essay on Bailment — Aristotle.
2. The History of the *American* War.
MODEL — Thucydides and Polybius.
3. Britain Discovered, an Heroic Poem on the Constitution of England. Machinery. Hindu Gods.
MODEL — Homer.
4. Speeches, Political and Forensic.
MODEL — Demosthenes.
5. Dialogues, Philosophical and Historical.
MODEL — Plato.
6. Letters.
MODEL — Demosthenes and Plato.
12th July, 1783. Crocodile Frigate.

In September, after a prosperous voyage, Sir William, as he was then called, landed at Calcutta, and in December of the same year entered upon his judicial duties. His reputation had preceded him, nor were the public expectations disappointed by the first act of his public life, which was a charge to the grand jury at the opening of the sessions. As soon as his duties allowed him, he devised the plan of a society for carrying on researches to which the efforts of individuals were inadequate, and for preserving valuable

tracts and essays. The presidency of this institution was first offered to Warren Hastings, then Governor-General of India; and, on his declining it, Sir William Jones was elected to the office. He immediately commenced the study of the Sanscrit, both that he might better fulfil his duties as president, and still more, that he might be able to judge more accurately and independently of the Hindu law. In order to fulfil his plans of study, he found that a strict economy of time was absolutely demanded. Perhaps it was about this time that he improved upon Sir Edward Coke's division of time: —

> "Six hours in sleep, in law's grave study six,
> Four spend in prayer — the rest on nature fix."

"*Rather*," says Sir William,

> "Six hours to law, to soothing slumber seven,
> Ten to the world allot, and *all* to heaven."

While at Calcutta, he found that the attraction of his conversation drew about him so many friends, that, gratifying as it was, his studies were much retarded by it. He therefore chose a country residence at not a great distance from the city, where he might suffer less interruption, and enjoy better health. The duties of the court, however, called him back again to town. "How long my health will continue in this town," he writes to a friend, "with constant attendance in court every morning, and the irksome business of justice of peace in the afternoon, I cannot foresee. If temperance and composure of mind will avail, I shall be well; but I would rather be a valetudinarian all my life, than leave unexplored the Sanscrit mine which I have just opened." "By rising before

the sun," he says in another letter, "I allot an hour every day to Sanscrit, and am charmed with knowing so beautiful a sister of Latin and Greek." While residing on the banks of the Ganges, at the distance of five miles from the court, it was his custom to rise so early in the morning as to walk to his apartments in town by the dawn of day, returning again in the evening after sunset. "It rarely happens," he writes to a friend, "that favorite studies are closely connected with the strict discharge of our duty, as mine happily are: even in this cottage, I am assisting the court, by studying the Arabic and Sanscrit, and have now rendered it an impossibility for the Mahommedan or Hindu lawyers to impose upon us with erroneous opinions."

A favorite project of his was to make a complete digest of Hindu and Mahommedan laws, after the model of the pandects of Justinian. The importance of this was evident from the fact that the Hindu and Mussulman laws were written, for the most part, in Sanscrit and Arabic; and he says, "My experience justifies me in declaring, that I could not, with an easy conscience, concur in a decision, merely on the written opinion of native lawyers, in any cause in which they could have the remotest interest in misleading the court: nor, how vigilant soever we might be, would it be very difficult for them to mislead us; for a single obscure text, explained by themselves, might be quoted as express authority; though perhaps, in the very book from which it was selected, it might be differently explained, or introduced only for the purpose of being exploded." The work being beyond the resources of a private man, he, after

some hesitation, applied to Lord Cornwallis, the Governor-General, for assistance from the State; or rather, setting forth the importance of the project, and offering his services, if they should be found to be of any value to the government. The offer was gladly accepted by that enlightened officer; and Sir William immediately entered upon the performance of the duty, by selecting from the learned natives those whom he thought best qualified for the task, and by tracing out the plan of the digest, and prescribing its arrangement.

In the beginning of 1794, he published a translation of the Ordinances of Menu, a work upon which he had long been engaged, and which he considered of great interest, as exhibiting the manners of a very ancient people, as well as their moral and religious system, to which they have adhered down to the present time. Sir William's health was generally very good; he often speaks of himself as having conquered the climate; and even the severe and protracted labors which confined him in the court for six or seven hours a day, and to his chambers four or five hours more, did not overcome his constitution. Lady Jones, however, suffered so much from constant debility, that he persuaded her, after much urging, to return to England. He would himself have accompanied her, having spent ten years in India, if he had not felt bound to remain and complete his voluntarily-assumed task of the digest of Hindu laws.

He little thought, when she, in obedience to his repeated request, sailed about the first of the year 1794, that they were never to meet again. On the 20th of April, of the same year, having prolonged his walk to a late hour, during which he

had remained some time in conversation in an unwholesome place, he complained of symptoms of the ague. The disease soon proved to be an inflammation of the liver, and in seven days he breathed his last, aged forty-seven years. The translation of the digest of Hindu law he did not live to complete. It was afterwards accomplished by one of the officers of the East India Company.

The tidings of his death were everywhere received with sorrow; and the means taken, both in England and India, to testify respect for his memory, were all that his friends could desire. His learning, as we have indicated, was vast. Although he turned his attention to languages with such distinguished success, yet he seemed to seize upon all knowledge with almost equal avidity. One of the last studies which he took up with interest was botany. He was accustomed to maintain that all were born with an equal capacity for improvement; and to a friend who asserted the contrary, and, in a few pleasant verses, supported his opinion by a reference to Sir William himself, he replied, almost impromptu, modestly estimating his character in lines with which we may well close this sketch.

"Ah! but too well, dear friend, I know
My fancy weak, my reason slow,
My memory by art improved,
My mind by baseless trifles moved.
Give me (thus high my pride I raise)
The ploughman's or the gardener's praise,
With patient and unmeaning toil,
To meliorate a stubborn soil;
And say (no higher meed I ask),
With zeal hast thou performed thy task.
Praise, of which virtuous minds may boast,
They best confer who merit most."

PATRICK HENRY.

Among the distinguished patriots of the American Revolution, the name of Patrick Henry will never be forgotten, and never be refused a commanding eminence. He was in the maturity of his powers when the Declaration of Independence was made, and had a full share of influence in bringing about that momentous event. He was among the most impassioned and effective of American orators, in a time fruitful of great men; — he attained the highest office in the important State of Virginia; — he held posts of extreme responsibility connected with the government of the United States; — and all this he effected through the almost unaided efforts of his own mind.

Patrick Henry was the son of a Scotchman, a native of Aberdeen, who came to this country in the first part of the last century, and established himself in Virginia. He was one of nine children, born at Studley, in Hanover county, May 26, 1736. Mrs. Henry, his mother, was a native of Virginia, and distinguished for many virtues. Patrick was early sent to school, and made some progress in the common branches of an English education. His father endeavored to teach him Latin and Greek, but his success was entirely disproportionate to his wishes. The boy was devoted to play; he loved the sports of the field above every thing else, and could not be confined to the discipline of the school. He chose, however, to pursue his sports alone rather than in

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company, and would lie by the hour, under the shade of a tree, watching his line floating upon the quiet waters, the bait untouched by a single fish; or when his party were chasing the deer, would station himself alone, so as to get a shot at the passing animal, without the ordinary tumult of the chase. This love of solitude, and his early habit of observing the character of those whom he was accustomed to meet, were the only traits which seemed to promise a future at all distinguished. Nothing indicated what he was to become. "His person," says Mr. Wirt, "was represented as having been coarse, his manners uncommonly awkward, his dress slovenly, his conversation very plain, his aversion to study invincible, and his faculties almost entirely benumbed by indolence. No persuasion could bring him either to read or to work."

This picture is sufficiently dark; and lest any one, in seeing afterwards the brilliant career of Mr. Henry, should be encouraged to early idleness, it should be borne in mind that this great man was not exempted from the stern law which affixes a penalty to every transgression. He was obliged to toil through years of early wretchedness and poverty; and, with all his success, could never entirely in after life supply the intellectual wastes of his youth.

At fifteen years of age, his father placed him with a merchant in the country, that he might begin to earn his own bread, and the next year established him in trade, in company with another son, William. They did not succeed. The only good that seemed to come from the trial was, that it gave Patrick a wider opportunity to study the

more delicate shades of character in the persons of his customers. It is said that when a company of them were together in his shop, if they were talkative, the future orator would remain perfectly silent and listen; but if dull, he would take upon himself to draw them out, would propose questions, suggest hypothetical cases, and relate stories, in order to observe the effects produced upon their feelings, or their different methods in debate.

In about a year the concern failed, and Patrick spent the next two or three years in winding up their affairs. Misfortune did not render him prudent, since we find him, at the age of eighteen, marrying the daughter of a farmer in the neighborhood, entirely respectable indeed, but unable to afford the young couple any effectual assistance. Undiscouraged, however, the young man obtained a small farm, which he cultivated in part with his own hands. His want of skill soon forced him to abandon this mode of life. In two years we find him selling off his farm at a sacrifice, and embarking every thing once more in merchandise. Again he was wrecked, and lost absolutely every thing. During this second experiment, however, his mind had become somewhat more serious. He began to read and to study. Geography and history became favorites with him. The charters and early records of the colonies, and the translations of ancient Greek and Roman historians, were diligently perused; and his tenacious memory seized and retained all in them that was valuable.

Having now failed in the pursuits which seemed naturally to attract him at first, with a buoyancy of spirits and a resolution above all praise, and of themselves almost sure precursors of success, he

turned his attention to the law. It was a last resort, and one in which there appeared very little to encourage his hopes. He devoted to this great study, the ridiculously brief period of six weeks, and then presented himself to the legal examiners for a license to practise. They hesitated; one of them refused to examine him; but afterwards, being of mild temper and perceiving evident marks of skill and talent in the young man, although he was lamentably deficient in knowledge of law, they gave the desired papers.

He was now twenty-four years of age, ignorant of his profession, sure to be opposed, if he should ever venture into the courts, by men of generous attainments and great practical skill, with a family depending upon his exertions, and with the very smallest means of satisfying their wants. For three years, during which their distresses were very great, his practice could hardly supply them with the bare necessaries of life. But he was approaching the great turning point of his life. He had suffered long and severely, but now was about to experience a happier fortune.

A warm controversy with the clergy had arisen in Virginia. The church of England was at this time the established church of the colony. An early act of the Assembly had decided that each minister of a parish should receive an annual salary of 16,000 pounds of tobacco. The general price of tobacco did not much vary from two pence the pound; but the clergy were accustomed to receive their stipend in the article itself, unless, for the sake of greater convenience, they commuted it for money. The year 1755 proved a bad one for the crop, and the price con-

sequently rose. An act was passed by the legislature authorizing the payment of all "tobacco debts," in money at the rate of "two pence the pound." This measure, though thought to be unjust, was not disputed, because it was limited in effect to one year. In 1758, however, the law was revived, upon a prospect of a small crop, and then the clergy determined to resist it. A war of pamphlets was carried on between them and the planters, which excited the strongest feelings on both sides. It was contended with evident justice, that the act was entirely for the benefit of the planters, who received fifty or sixty shillings a hundred for their tobacco; "while they were permitted to pay their debts due in that article, at the old price of sixteen shillings and eight pence." The popular feeling was strongly against the clergy. The king, however, declared the act an usurpation and of no binding force. The clergy brought their suit against the collector of the county, and gained it; the judges giving their opinion against the act of 1758; and the question was then on the amount of damages. The lawyer who had thus far managed the case for the planters, gave it up in despair. Mr. Henry was then applied to, and undertook to argue the cause at the next court. On the appointed day, the room was crowded. The clergy appeared in full force. Mr. Henry's father was the presiding magistrate. The counsel on the other side stated the case fully and fairly, and with much eloquence, greatly to the satisfaction of his clients. Mr. Henry rose in his turn, and, with awkwardness and a faltering tongue, stammered out his exordium. But soon every thing was changed. His attitude became

erect; his countenance glowed; the whole man became instinct with life; and in his tones there was a magic perfectly overwhelming. He seemed like a new creature, and by his unexpected eloquence absolutely swept along with him the audience, the jury, and the court. It was a triumphant exhibition of the power of feeling; for of argument there probably was very little. The clergy actually fled from the bench; tears streamed down the cheeks of his father, who forgot every thing in the unexpected success of his son; and the jury, disregarding the admitted rights of the plaintiff, returned a verdict of *one penny damages*. A motion was made for a new trial, but the court overruled it. No sooner was the cause decided than the people seized the successful advocate, bore him out of the court-house, and carried him about the yard on their shoulders in triumph. No record of this speech was preserved, and those who heard it could give little account of it. They only remembered its effects; and long afterwards, when they would praise a man for eloquence, were accustomed to say, "*he is almost equal to Patrick, when he plead against the parsons.*"

By this effort Mr. Henry became famous in that part of the colony, and every undecided case of the same kind was put into his hands. He, however, was still subjected to a trying struggle against want; and, in the course of his practice, was often compelled to lament the deficiencies of his legal knowledge, for want of which, men, much his inferiors in general power, not unfrequently carried away the victory.

Virginia exhibited at that time strong differences between the various classes of society.

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The wealthy and aristocratic landholders were separated, both in feelings and in manners, from the poorer yeomanry, who looked upon them with considerable jealousy. Mr. Henry sprang from the humbler class, and was ever regarded by the people as one of themselves. He was sometimes accused even of imitating their rude manners and outlandish accent for the sake of gaining the greater popularity. He had no need, however, of employing these unworthy arts, when his nobler natural gifts were amply sufficient to secure the love and confidence of those whom he was chosen to serve.

Notwithstanding the general roughness of his appearance, and his deficiency in mere legal knowledge, and the occasional impropriety in his use or pronunciation of language, there was a charm about his speaking, even upon ordinary subjects, which was perfectly fascinating. Judge Lyons, of Virginia, was accustomed to say "that he could write a letter, or draw a declaration or plea, at the bar, with as much accuracy as he could in his office, under all circumstances, *except when Patrick rose to speak;* but that, whenever *he* rose, he was obliged to lay down his pen, and could not write another word until the speech was finished."

The years which immediately followed Mr. Henry's full success in legal practice, were the most eventful of his life, and among the most important in American history. In January, 1765, the famous stamp act was passed by the British Parliament. The object was to raise a revenue from the colonies; the distant results were such as the most sagacious statesmen did not conjecture.

The intelligence of this procedure fell upon the colonies with disheartening effect. Resistance was hardly thought of; but the measure seemed fraught with great injury to a people who thus were liable to any amount of taxation by a government in which they had no share, and which, at the best, was liable to misunderstand their capacities and their disposition. On the rumor that such a measure was in anticipation, the House of Burgesses of Virginia prepared an address to the King, a memorial to the Lords, and a remonstrance to the House of Commons. The act, however was passed, to go into effect in November, 1765. The House of Burgesses met again in May, and Mr. Henry was elected a member, partly for the purpose of adding the influence of his fervid eloquence to the proceedings which it was presumed would be entered upon in view of the emergency.

The session, however wore away, and the leaders of the house, the gifted aristocracy of the State, brought forward no plan for expressing the feelings of the people.* In the mean time Mr. Henry had rendered himself obnoxious to the leading men, by opposing successfully a measure which they had brought forward relating to the financial affairs of the State. His eloquence was

*It was during this session that General Washington received the public thanks of the house, for his conduct in the French and Indian war. In rising to express his acknowledgments for the honor, he was so much overcome with various feelings that he could not utter a word. The Speaker, Mr. Robinson, came to his relief by adding to his former remarks with great felicity — "Sit down, Mr. Washington; your modesty is equal to your valor, and that surpasses the power of any language that I possess."

admired, but began to be feared. Such was the state of things, when, within three days of the close of the session, having waited in vain for the expected demonstration of others, he brought forward his resolutions on the Stamp act. They were brief, plain, and earnest, and asserted with great distinctness and strength the sole right of the inhabitants of the colony to tax themselves, and the danger to the liberty both of England and America, of vesting this power anywhere else.

These famous resolutions were debated with great vigor; the more wealthy members and those highest in social distinction opposing them, partly on the ground that no answer had yet been received to their remonstrance of the preceding year. They were, however, carried, although by a majority of only one or two. Mr. Henry left town the same day; and on the following morning, the strongest of the resolutions was repealed; but the impression produced by the action of the Assembly, and the eloquent discussion which preceded it, spread through the country, and added immensely to the feeling of hostility with which the measure of the British Government began to be regarded. An anecdote is told of Mr. Henry during his vehement speech on the resolutions, which illustrates remarkably his peculiar powers. We give it in the words of his eloquent biographer, Mr. Wirt. "It was in the midst of this magnificent debate, while he was descanting on the tyranny of the obnoxious act, that he exclaimed, in a voice of thunder, 'Cæsar had his Brutus, — Charles the First, his Cromwell, — and George the Third — ('Treason!' cried the

Speaker, — 'treason!' 'treason!' echoed from every part of the house. It was one of those trying moments which is decisive of character. Henry faltered not for an instant; but rising to a loftier attitude, and fixing on the Speaker an eye of the most determined fire, he finished his sentence with the firmest emphasis) *may profit by their example.* If *this* be treason, make the most of it."

The stamp act was subsequently repealed, and the collision between the mother country and the colonies was for a time delayed.

Although prominently before the country as a public man, Mr. Henry continued in active practice of the law. For some of the duties of this great profession, he was remarkably fitted; while, with respect to others, he was very deficient. "He never did and never could vanquish his aversion to the systematic study of the law." Hence it happened, that when contending on legal points, with men of distinguished abilities and attainments, he was very frequently vanquished. He could not adduce authorities, or, if he ventured to bring them forward, it not unfrequently happened, that he did it so unskillfully as to defeat his own purpose. But in questions where natural justice, and the great principles of equity were concerned, the full vigor of his genius made itself felt. If he halted in arguments before the court, no sooner did he turn to the jury than every difficulty vanished. He was in his native element; every spring of feeling he knew how to touch; before the jury knew it, and spite of their resolutions to the contrary, he wound his silken cords about them, and led them wherever he pleased.

His voice was charming, his address delicate, insinuating, and without pretence or parade; by a few masterly strokes he gave the character wished to the whole case, turned their minds from the unfavorable points, and lighted up with a splendid glow of color all that was favorable to his client. He was so accustomed to read the character in the face, that he rarely missed in his judgment of the jury; and his plastic power enabled him to adapt his argument and appeal to their peculiarities, with almost unerring certainty. "The eighth day of the general court was formerly set apart for criminal business. Mr. Henry made little or no figure during the civil days of the court; but on the eighth day, he was the monarch of the bar."

The satisfaction felt in America at the repeal of the stamp act was of short continuance. It was soon perceived that the British Parliament had retracted none of their principles. Duties were imposed upon various articles of general use; troops were quartered in some of the principal cities, for the purpose of overawing the inhabitants; the port of Boston was shut up; the legislatures of different states were dissolved, for opposition to the regal authority. In consequence of these, and many other acts, the home government came to be regarded with great dislike; and although the idea of *independence* was not yet entertained, the minds of the people were gradually preparing for it.

On the 4th of September, 1774, the old Continental Congress met at Philadelphia. The most distinguished men in the country were present. Among the delegates from Virginia were

George Washington and Patrick Henry. In the proceedings of that venerable convention, Mr. Henry bore a distinguished part. So far as a strong and eloquent statement of the grievances of the colonies was concerned, he bore away the palm; but when the convention proceeded to the plain details of business, he showed himself inferior to many others. He was appointed to draw up a petition to the king; but when read, it was so far from meeting the general expectation, that it was recommitted, and subsequently another petition prepared by another member of the committee, was adopted. This was, perhaps, one of the mortifying results of his neglected early education.

On returning from this Congress, Mr. Henry was asked who he thought the greatest man in the assembly? "If you speak of eloquence," he replied, "Mr. Rutledge, of South Carolina, is by far the greatest orator; but if you speak of solid information and sound judgment, Colonel Washington is unquestionably the greatest man on that floor." So early did the minds of men become fixed with reverent affection upon him who is so well called *The Father of his Country.*

The convention of Virginia delegates met for the second time, on the 20th of March, 1775. They assembled at Richmond. Mr. Henry was a member of the body, and one of the leading spirits of it. After various preliminary business, resolutions were introduced expressive of the feelings of the colonies, and ending with the hope of a speedy return of peace and quietness. These resolutions seemed to Mr. Henry altogether deficient in boldness; and he introduced another series, of which the last was as follows: "Resolved, *That*

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this colony be immediately put into a state of defence, and that —— be a committee to prepare a plan for embodying, arming, and disciplining such a number of men as may be sufficient for that purpose." For so decided a step, the convention was not prepared. The resolutions were opposed by men of undoubted patriotism and prudence, as rash and unnecessarily harsh. "It was ungracious," they said, "and wanting in filial respect and in dignity, thus hastily to take the extreme position of armed resistance to the mother country. It would put their friends in England to the blush, and unite the whole nation against them. Besides, the colonies had no means to resist the mighty power of England; — no armies, no navy, no military stores, no money, no skilful generals. Moreover, the king and Parliament were beginning to view matters more kindly, and a day of reconciliation was at hand, which such rash counsels might long defer or render impossible."

In these arguments there was great weight. The colonists were bound by strong ties to the mother country; and they were extremely reluctant to cut loose from *home*, even if it could be done without hazard. But Mr. Henry saw, or thought he saw, that it was impossible longer to remain happily united to England. He thought that favorable appearances were delusive, and that the time for decisive action had come. It was then, with the mass of talent in the house against him, opposed too by men in whose patriotism and honesty he had entire confidence, that he made that earnest speech, which can never be forgotten in the annals of American eloquence, and which is more or less familiar to half the

school-boys in the United States. The whole burden of it seemed to be concentrated in the solemn sentence in which, with calm dignity and inexpressible force, he expressed his deep convictions — "*We must fight! I repeat it, Sir,* WE MUST FIGHT!! *An appeal to arms and to the God of Hosts is all that is left to us.*" His words were prophetic. "The war," he said, "is actually begun. The next gale that sweeps from the north, will bring to our ears the clash of resounding arms. Our brethren are already in the field. Why stand we here idle? * * * I know not what course others may take; but as for me," — and here he extended his arms aloft, with his brows knit, every feature marked with the resolute purpose of his soul, and his voice swelled to its boldest note of exclamation, — "give me liberty, or give me death!"

The effect was electric. "No murmur of applause was heard. After the trance of a moment, several members started from their seats. The cry 'to arms!' seemed to quiver on every lip and gleam from every eye." Opposition to the resolutions was entirely overcome, they were adopted, and a committee appointed, among whom we find the distinguished names of Washington, Jefferson, Richard Henry Lee, and others. It is worthy to be remarked, that, with generous confidence, many were put upon this committee who had strongly opposed the resolution, as if to show that their hearts were one, although their heads might differ somewhat as to the precise measures which the crisis demanded. In less than a month from this time, was fought the battle of Lexington (April 18, 1775), caused, as will be recollected, by an

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attempt of the British troops to seize some military stores at Concord. Only two days after this battle (April 20), the captain of an armed schooner, lying in James river, by orders of Lord Dunmore, the governor of Virginia, came to Williamsburg, the capital of the State, by night, and carried away the powder from the public magazine. The muskets in the magazine were also deprived of their locks. This was an indication of an attempt to disarm the State. The people were alarmed, and were only pacified by the strong efforts of their public men, added to the solemn promise of the governor, that the powder should be returned whenever wanted on account of any insurrection among the negroes, which, it seems, was somewhat feared. In the mean time, came the news of the battles of Lexington and Concord, which did not tend to allay the excitement in the country. A body of seven hundred men were with difficulty dissuaded from marching upon Williamsburg. Mr. Henry was, however, too much excited to allow matters to go on without some more earnest demonstration of the manner in which the action of the governor was regarded. Having assembled an independent company, of which he was chosen captain, he succeeded, by vigorous measures, in obtaining from the king's receiver-general a bill of exchange for three hundred and thirty pounds, which was the reputed value of the powder taken from the public stores. The company then dispersed, and returned to their homes.

It was not long after, that Lord Dunmore left the capital, and took refuge on board the Fowey man-of-war, lying in the river, and, in the course

of a little while, commenced a series of unprovoked attacks on the defenceless and exposed parts of the country. No other permanent effect was produced by this cruelty, than to add greatly to the popular exasperation. We cannot enter into a detail of the military operations of the colony. Mr. Henry was elected colonel of the first regiment of troops, and commander-in-chief of all the forces raised and to be raised for the defence of the colony. In his military command, he was, however, subjected to many peculiar trials, which resulted at last in his throwing up his commission.

By the departure of Lord Dunmore, and the proceedings consequent upon it, the colony was left without public officers. In order to provide for this emergency, a convention of delegates from the State proceeded to draw up the necessary plans for a new government. On the 15th of May, 1776, the convention, by a unanimous resolution, instructed the delegates to the general congress, to propose to that body *to declare the United Colonies free and independent States;* and also to assent to measures which might be necessary for forming *a confederation of the States, and foreign alliances.* This resolution proceeded from the same hand which subsequently contributed so much to the declaration of independence. During the next month the constitution of Virginia was adopted, and Patrick Henry had the honor of being elected the first republican Governor.

This was not only very gratifying to himself, but was regarded with high favor in the State generally. He was reëlected in 1777 and 1778, to the same office; and only declined a re-

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election in 1779, from a belief that the constitution did not allow him to serve four years in succession. During these years, some of the most trying of the war, although he was confined to the duties of a single post, his influence was strongly used for the country. In the second year of his office, the disgraceful plot to supplant General Washington came to its crisis. It arose from the selfish dissatisfaction of certain officers in the army; and the object was to deprive Washington of his station as commander-in-chief, and confer the power upon General Gates. Mr. Henry received an anonymous letter, couched in artful and flattering language, full of insinuations and open charges against Washington, and soliciting the concurrence of the Governor of Virginia.

Mr. Henry did not hesitate a moment, but, ignorant as he was of the author, enclosed it in a letter of great frankness, and sent it to General Washington, then at Valley Forge. The General replied with much cordiality. The results of the cabal, and how it recoiled upon the heads of those who encouraged it, while the honor of Washington shone brighter than ever, are matters of history.

After resigning his post as Governor, Mr. Henry was returned as a member of the legislature, and continued for several years to represent the county of his residence. One of his most powerful efforts, during this time, was his advocacy, at the close of the revolutionary war, of the return of the British refugees, against whom there was a vehement prejudice. Mr. Henry argued in favor of it, as a matter of humanity, of justice, and of policy. No one in the house

had such indubitable control of the feelings of the members as himself. He was acquainted with the local prejudices of different sections of the State, and could appeal to them with great effect. This power, although capable of being perverted to unworthy ends, Mr. Henry used when the question really affected local affairs, and when his convictions were very strong of the utility of the measures advocated. We will give an instance furnished by one who heard the debate. The finances of the State having become much deranged during the war, it was thought best by a large party in the legislature, among whom were Mr. Tyler (then Speaker), Mr. Tazewell, Mr. Page, and other distinguished men, to endeavor to restore the State credit by laying taxes equal to the emergency. Mr. Henry, on the contrary, thought it better policy to wait a while, and so allow the people a little time for recovering from the prostrating effects of the war. In the committee of the whole house the bill had been carried, and was then reported to the House. Mr. Henry, smarting under the defeat, then brought all his power to bear against it. "The feelings of Mr. Tyler, which were sometimes warm, could not on that occasion be concealed even in the chair. His countenance was forbidding, even repulsive, and his face turned from the speaker. Mr. Tazewell was reading a pamphlet; and Mr. Page was more than usually grave. After some time, however, it was discovered that Mr. Tyler's countenance gradually began to relax; he would occasionally look at Mr. Henry; sometimes smile; his attention by degrees became more fixed; at length it became completely so: he next appeared

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to be in good humor; he leaned toward Mr. Henry; appeared charmed and delighted, and finally lost in wonder and amazement. The progress of these feelings was legible in his countenance."

"Mr. Henry drew a most affecting picture of the state of poverty and suffering in which the people of the upper counties had been left by the war. His delineation of their wants and wretchedness was so minute, so full of feeling, and withal so true, that he could scarcely fail to enlist on his side every sympathetic mind. He contrasted the severe toil by which they had to gain their daily subsistence, with the facilities enjoyed by the people of the lower counties. The latter, he said, residing on the salt rivers and creeks, could draw their supplies at pleasure from the waters that flowed by their doors; and then he presented such a ludicrous image of the members who had advocated the bill (the most of whom were from the lower counties), peeping and peering along the shores of the creeks, to pick up their mess of crabs, or paddling off to the oyster rocks *to rake for their daily bread*, as filled the house with a roar of merriment. Mr. Tazewell laid down his pamphlet, and shook his sides with laughter; even the gravity of Mr. Page was affected; a corresponding change of countenance prevailed through the ranks of the advocates of the bill, and you might discover that they had surrendered their cause. In this they were not disappointed; for on a division, Mr. Henry had a majority of upwards of thirty against the bill."

In 1784, Mr. Henry was again elected governor of Virginia. According to the constitution, he

could be reëlected for three successive years; but, finding that the salary was not sufficient for his support, he, in 1786, declined to continue in the office. He was, however, the same year appointed, with Washington, Madison, Edmund Randolph, John Blair, George Mason, and George Wythe, to attend the convention about to meet at Philadelphia, for the purpose of revising the federal constitution. This honor, however, he declined for the same reason, and returned again to the bar for the sake of recovering his fortune.

The task which the framers of the present federal constitution had to perform, was one of extreme delicacy and importance. On their success depended the hopes of the United States. The efforts of foreign enemies had been overcome, and now remained to be achieved the greater victory of peace, the establishing of a government equal to the control of so vast a country, whose internal arrangements were complicated, whose finances were in a ruinous condition, and whose resources were almost entirely undeveloped. In September, 1787, after a discussion of about four months, the constitution was adopted, with a proviso that the ratification of it by nine States should be sufficient for its final establishment. In all the States it was debated with great vehemence, but was finally adopted by all. Six ratified it absolutely; and seven, with the recommendation of certain amendments. In July, 1788, ten States having acceded, it was ratified by Congress, and in February, 1789, George Washington was chosen the first President.

The Virginia Convention for considering the subject met in Richmond, June 2, 1788, and ex-

hibited a remarkable array of talent. Few States could have collected together such men as Marshall, Madison, Munroe, and Henry. Mr. Henry regarded the constitution with great fear, and opposed it with all his might. And never did his great talents shine more conspicuously than when, for day after day, and week after week, he combatted the powerful arguments of his great antagonists. His opposition, however, was not factious, but the result of earnest, although as experience has proved, groundless fears. Towards the close of the protracted debate, with the courtesy which always marked his public efforts, "he begged pardon of the House for having taken up more time than came to his share, and thanked them for the patience and polite attention with which he had been heard;" and then added, as if feeling a presentiment of defeat, "If I shall be in the minority, I shall have those painful sensations which arise from a conviction of being overpowered in a good cause. *Yet I will be a peaceable citizen!* My head, my hand, and my heart, shall be free to retrieve the loss of liberty, and remove the defects of that system, in a *constitutional way.* I wish not to go to violence, but will wait with hopes that the spirit which predominated in the revolution is not yet gone; nor the cause of those who are attached to the revolution, yet lost." This was the spirit of a true patriot; how heaven-wide from that which, to gain its own ends or the ends of its party, would willingly see the vast fabric of the government laid in ruins. Fortunately the efforts of Mr. Henry were unsuccessful; the constitution was adopted, and he himself lived to regard it with much less fear than at first.

Certainly he kept his pledge of obedience to it, and found occasion, too, to lend his powerful influence to the government.

In the spring of 1791, Mr. Henry declined a reëlection to the Virginia legislature, and, though afterwards invited, never entered into public life again. In the fall of this year he was engaged in one of his most important legal cases before the Circuit Court of the United States. It was the celebrated case of the British debts; one of very considerable importance as affecting the rights of British claimants who held debts against American citizens, contracted before the war. This question had been gravely agitated in several of the States. We have not space to go into a description of the cause, nor would it perhaps be proper so to do. Mr. Henry, in company with Mr. (afterwards Chief Justice) Marshall, Mr. Campbell, and Mr. Innis, the attorney-general of Virginia, was engaged for the defendant, a native of the State. Mr. Henry's plea was highly elaborated, and displayed a strength of legal argument and an extent of knowledge which surprised those even who knew him best. A singular proof of the great interest felt by every body in his eloquence, is found in the fact that, although the house of delegates was at that time in session, it was impossible to collect a *quorum* for business. For three days, during which he was proceeding with his argument, the assembly-room was deserted, and the court-room crowded. "When he finally sat down," says his biographer, "the concourse rose with a general murmur of admiration; the scene resembled the breaking up and dispersion of a great theatrical assembly, which had

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been enjoying, for the first time, the exhibition of some new and splendid drama: the speaker of the house of delegates was at length able to command a quorum for business; and every quarter of the city, and at length every part of the State, was filled with the echoes of Mr. Henry's eloquent speech."

His success at the bar did not desert him; and, whenever he appeared, crowds followed to listen and wonder, or rather to forget every thing in the strong feelings which he was sure to excite. The speeches by which his most powerful effects were produced, are entirely lost to us. Of many of them no report was ever attempted; of others, an unsatisfactory outline is all that has been preserved. In place of the speeches, we only have descriptions of the feelings they produced on certain hearers. On one occasion, says Mr. Wirt, "he appeared at the bar of the house of delegates, in support of a petition of the officers of the Virginia line, who sought to be placed on the footing of those who had been taken on continental establishment; and after having depicted their services and their sufferings, in colors which filled every heart with sympathy and gratitude, he dropped on his knees, at the bar of the house, and presented such an appeal as might almost have softened rocks, and bent the knotted oak. Yet no vestige of this splendid speech remains; nor have I been able, after the most diligent inquiries, to ascertain the year in which it occurred; similar petitions having been presented, for several successive sessions."

In 1794, Mr. Henry, having become free from debt, and having acquired a sufficient fortune,

finally retired from professional life. The commendations of his best biographer, Mr. Wirt, seem to be fully deserved. "He retired, loaded with honors, public and professional; and carried with him the admiration, the gratitude, the confidence, and the love of his country. No man ever passed through so long a life of public service, with a reputation more perfectly unspotted. Nor had Mr. Henry, on any occasion, sought security from censure, by that kind of temporising neutrality which politicians so frequently observe. On the contrary, his course had been uniformly active, bold, intrepid, and independent. * * * For more than thirty years he had now stood before his country, open to the scrutiny and the censure of the invidious; yet he retired, not only without spot or blemish, but with all his laurels blooming full and fresh upon him; followed by the blessings of his almost adoring countrymen, and cheered by that most exquisite of all earthly possessions—the consciousness of having, in deed and in truth, played well his part."

In the bosom of his own family, he now prepared to pass the serene evening of his days. Nothing could be more delightful than to be admitted to the social enjoyments of his fireside. Dignified but simple, wise in the experience of a varied life, and ready to communicate what he knew, many were the visiters who came to enjoy the pleasure of his society, and none came without a welcome. In his own family he was full of affection and tenderness, the life and happiness of the circle. "His visitors have not unfrequently caught him lying on the floor, with a group of his little children climbing over him in every di-

rection, or dancing around him, with obstreperous mirth, to the tune of his violin, while the only contest seemed to be who should make the most noise." Of this anecdote, furnished by a correspondent of his biographer, Mr. Wirt remarks: "If there be any bachelor so cold of heart as to be offended at this, I can only remind him of the remark of the great Agesilaus to the friend who found him riding on a stick among *his* children, '*Don't mention it till you are yourself a father.*'"

After Mr. Henry's retirement from public life, party politics ran very high. Those who defended the government, and those who opposed it were considered by each other as carrying their opinions and measures to an unwarrantable extreme. Mr. Henry, although opposed, as we have said, to the adoption of the constitution, came to feel that Washington, for whom he had great affection, was unkindly, or even, as he said, "abusively treated;" and though he professed not to have changed his opinions, his sympathies had evidently gone with the defenders of the government. His opinions at this period of his life are well worthy of careful study.

In 1796, he was again chosen Governor of the State, but declined the appointment. The Embassy to Spain and that to France were offered to him by the general government, but declined on account of his age, and the circumstances of his family.

In 1799, although his health had been for a year or two declining, he felt called upon to offer himself as a candidate for the legislature, on account of the strong opposition which had manifested itself in the State to the alien and sedition

laws. One of the most affecting incidents of his life occurred on the day of election. As he was walking among the crowd, receiving the homage which they were so ready to bestow, a Baptist preacher "asked the people aloud, 'Why they thus followed Mr. Henry about? Mr. Henry,' said he, 'is not a god.' 'No,' said Mr. Henry, deeply affected both by the scene and the remark, 'no, indeed, my friend, I am but a poor worm of the dust — as fleeting and unsubstantial as the shadow of the cloud that flies over your fields, and is remembered no more.' The tone with which this was uttered, and the look which accompanied it, affected every heart, and silenced every voice. Envy and opposition were disarmed by his humility; the recollection of his past services rushed upon every memory, and he read his history in their swimming eyes." His address to the people, on this occasion, was the closing effort of his eloquence. It was an earnest entreaty that they should not spend their strength in contending against each other, but preserve it for whatever foreign foe might seek to prostrate the country.

He was elected by a large majority, but did not live to take his seat in the assembly. On the 6th day of June, 1799, he passed beyond the perplexities and responsibilities of this life, and entered on the great theatre of the future world. His fame, obscured a little during the latter part of his life by the clouds of party feeling, will shine brighter and brighter for many a year. As an orator, none of his time stood so high as he; and although posterity must rely mainly upon testimony, they will not be likely to reverse the unanimous decision of his contemporaries.

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Mr. Henry had a high regard for religion, although, to our regret, he does not appear to have made a public profession of his religious faith. In a letter to one of his daughters, he says: "The view which the rising greatness of my country presents to my eyes, is greatly tarnished by the general prevalence of deism; which, with me, is but another name for vice and depravity. I am, however, much consoled by reflecting, that the religion of Christ has, from its first appearance in the world, been attacked in vain by all the wits, philosophers, and wise ones, aided by every power of man, and its triumph has been complete. What is there in the wit, or wisdom of the present deistical writers or professors, that can compare them with Hume, Shaftsbury, Bolingbroke, and others? And yet these have been confuted, and their fame is decaying; in so much that the puny efforts of Paine are thrown in to prop their tottering fabric, whose foundations cannot stand the test of time. Amongst other strange things said of me, I hear it is said by the deists, that I am one of the number; and, indeed, that some good people think I am no Christian. This thought gives me much more pain than the appellation of tory, because I think religion of infinitely higher importance than politics; and I find much cause to reproach myself, that I have lived so long, and have given no public and decided proofs of my being a Christian. But, indeed, my dear child, this is a character which I prize far above all this world has or can boast." "Here is a book," said he, to a friend who found him reading the Bible, not a great while before his death, "worth more than all the other books that were ever printed;

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yet it is my misfortune never to have found time to read it with the proper attention and feeling, till lately. I trust in the mercy of heaven that it is not yet too late." Doddridge's "Rise and Progress of Religion in the Soul," Butler's "Analogy of Religion, Natural and Revealed," and Soame Jenyns's "View of the Internal Evidences of the Christian Religion," were among the serious books to which he was very partial. He was so much pleased with the last-named work, that he had an edition printed at his own expense, and distributed among the people.

Mr. Henry has been charged with too great a love for money, and an extravagant desire for fame. How far either of these defects actually existed, we have no means of fully determining. Certainly his love of money did not prevent him, in a course of public life, from being, at the age of fifty years — an age at which most men have made a fortune if they ever make it — embarrassed with debt, and obliged to decline honorable offices, and betake himself to a laborious profession, in order to support his family. Neither did his love of fame keep him from rendering the most ample honor to the great men of the country, or affording a very generous assistance to the young who were working their way to an honorable position in life.

It is justly charged upon him that he was deficient in the knowledge to be derived from books, as he always shrunk from the toil necessary to acquire it. His library was small, and quite unworthy of a man in his station. But his knowledge of men was vast. "Take my word for it," said he, to a noted book-worm whom he met in a

book store, "*we are too old to read books; read men;* they are the only volume that *we* can peruse to advantage." His discernment of character was rapid and just, and led him to form opinions of others which time was almost sure to justify. His political sagacity was also very great. He had strong common sense, and this was the basis of his power in all that he did. It saved him from mistakes, and kept him, in the full fervor of his eloquence, from "overstepping the modesty of nature," and giving way to the *mere* impulse of feeling. His person was commanding, and his power of expression, by means of gesture and the various motions of his countenance, gave great force to his eloquence. For a full description of this power, the reader is referred to his biography by a kindred and beautiful spirit, Mr. Wirt, from which a great part of this sketch has been derived. As an orator, a statesman, a patriot, the name of PATRICK HENRY will never be forgotten in the annals of his country.